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CONTENTS

PAGE

EDITORIAL 3

GREETINGS FROM COOPERATING ORGANIZATIONS 4

Factors Associated with School Drop-Outs 7
Alberta E. Hohol

A Survey of Reading Achievements in Alberta Schools 18
Anne Carmichael and Robert E. Rees

A Comparative Study of Public and Private Bus Ownership of School Buses in Alberta 34
Robert A. Kimmitt

Why Teaching Is Chosen as a Career 44
S. T. Clarke and W. Pilkington

The Reading Abilities of Adults 53

BOOKS 61

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The Alberta Journal of Educational Research

THE COMMITTEE ON EDUCATIONAL RESEARCH

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VOL. I, No. 2 JUNE, 1955

CONTENTS

PAGE

EDITORIAL 3

A Study of the Written Composition of a Representative Sample of Alberta Grade Four and Grade Seven Pupils 5
H. T. Coutts and H. S. Baker

Roman Catholic Separate and Public Schools in Alberta 19
Sister L. A. Hochstein, F.C.J.

A Cooperative Staff Project to Improve Reading 30
Everett B. Ooley

A Survey of the Language Achievement of Alberta School Children 39
T. James Reid and George R. Conquest

APPENDIX: A Composition Scale for Alberta Grade Four and Grade Seven Students 53

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The Alberta Journal of Educational Research

THE COMMITTEE ON EDUCATIONAL RESEARCH

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VOL I, NO. 3 SEPTEMBER, 1955

CONTENTS

PAGE

EDITORIAL 3

A Study of the Self-Concept and Ideal-Concept in Adolescence 5
J. R. McGregor

An Investigation into the Annoyances and Frustrations which Cause Alberta Teachers to Quit Teaching 17
Thomas H. Murray

Physical Education in Alberta High Schools 34
Kenneth Grierson

Post-School Occupations of Alberta 1949 High School Graduates with University Entrance Standards 43
W. Glyn Roberts and A. O. Ackroyd

An Analysis of the Editorial Treatment of Education in the Alberta Press 54
Walter H. Worth

The Alberta Journal of Educational Research

THE COMMITTEE ON EDUCATIONAL RESEARCH
Faculty of Education
University of Alberta

VOL. I, No. 4 DECEMBER, 1955

CONTENTS

PAGE

EDITORIAL 3

Individual Differences in Alberta Schools 5
G. M. Dunlop, S. Hunka, H. Zingle

An Analysis of English Errors and Difficulties among Grade Ten Students in the Smoky Lake School Division 15
Michael Skuba

Promotion Practices and Policies in Alberta Schools 24
S. C. T. Clarke

A Survey of Arithmetical Achievement of Grade Eight Pupils in Alberta Schools 35
Clarence E. Climenhaga

A Study of Spelling Disabilities in Grades Four, Five, and Six 48
Dorothy M. Lampard

Editorial

RESEARCH IN THE UNIVERSITY

PRESIDENT ANDREW STEWART

Universities are concerned with the communication of knowledge and with the extension of knowledge. Teaching is their main concern, but research—the application of disciplined intellectual curiosity at the margins of knowledge—is required by the teaching function. The effective teacher is the kind of person who is possessed of intellectual curiosity, and can induce the same curiosity in his students. Those engaged in transmitting knowledge should wish to expand the boundaries of their own knowledge . It is a good thing for a University to be staffed by teachers who feel compelled to do some research.

Learning, at the graduate level, requires contact with research. The graduate student should be exercising his intellectual curiosity and be learning the methods of disciplined enquiry. There must be enough research available at the University to meet the needs of graduate students. However, research projects for graduate students should be selected on the basis of the educational experiences to be derived from them. If projects are chosen for other reasons (for example, the instructor wishes assistance in his own research, or some fellowship donor has a particular problem he wishes investigated) they may make little contribution to the primary function of the University.

Research is also carried on in Universities as a function unrelated to teaching—that is, for its own ends. To an increasing extent other institutions and agencies, public and private, are providing facilities and personnel for research, and are maintaining their own research programs. Under what conditions should research, unrelated to the teaching function, be placed in the University rather than elsewhere?

Where research has already developed in a University, and facilities and organization already exist, duplication can be avoided by attaching new research to the existing University organization.

There may be on the University staff persons who are particularly well qualified to undertake or direct research in a particular field. Such persons may, however, be highly competent teachers. Diversion of their efforts to research, not required by the teaching function, can be justified only by the importance of the research.

Universities may provide more effective conditions for research than would obtain elsewhere. It has been the traditional policy of

Universities to permit the widest possible latitude in the pursuit of knowledge by the staff. The production of knowledge responds to free enterprise.

Those close to educational problems are conscious of the limitations of our knowledge and understanding of educational processes, but confident that the effectiveness of these processes can be significantly increased by disciplined study of them. The interest in developing an organized and continuing program of educational research in Alberta is evidence both of concern and confidence.

The University believes that, because of the unique organization of its Faculty of Education, it can, with adequate support, provide the personnel, facilities and conditions for an effective program of educational research; and welcomes the opportunity to participate in it.

Greetings From Cooperating Organizations

The Department of Education extends best wishes for a successful and useful career to the newly established *Alberta Journal of Educational Research*. The problems of education are many and lie in a number of fields. The resolving depends upon many factors, including the harmonizing of varied points of view, public support, competent personnel, practical experience and others. But as in the resolving of any sort of problem it is most important to know the facts, and facts in relation to educational problems are often hard to come by. It is no doubt a reasonable assumption that the Journal, and the research which it expects to report, will be dedicated to the extension of our factual knowledge in education. We shall follow its progress with interest.

Dr. W. H. Swift
Deputy Minister of Education

Best wishes from the Alberta School Trustees for the success of the new venture, *The Alberta Journal of Educational Research*.

The Trustees believe that research into various educational questions, by trained personnel, can produce beneficial results. It might, in some instances, give the answers to some of the problems that confront us from time to time. That is why we support the Research Committee. However, to get the most good out of the findings the story must be told to interested people over a wider area than can be done by person-to-person contact.

So we wish the Research Committee success in its endeavors and the Journal in publicizing the conclusions.

R. J. Hennig, President
Alberta School Trustees' Association

During the past two years educationists in Alberta have been busy cutting chips from trees as they move forward in the field of research. The publication of this first issue of *The Alberta Journal of Educational Research* will serve as notice to the rest of Canada that yet another bit of educational trail-blazing has taken place in Alberta.

The Alberta Teachers' Association greets this Journal with two-fold pleasure. First, it is a tangible result of educational research in which the Association has had a part and which it could not have carried on by itself. Second, this has been an opportunity for our Association to work cooperatively with other educational bodies and agencies in a matter very important to education.

On behalf of the Alberta Teachers' Association I should like to congratulate and to thank those forward-thinking individuals in the Faculty of Education and the Department of Education who initiated the idea of the Alberta Advisory Committee on Educational Research. May our Association, in concert with others, push forward in research to the betterment of education within our province.

Frank J. Edwards, President
Alberta Teachers' Association

Looking over reports of Home and School Committees covering many years, I discovered that the desire to know how the educational performance in Alberta ranked was expressed frequently. How did it compare with previous performances, with other provinces, or with results obtained under other methods of teaching? Little educational research had been undertaken and the answers to these questions appeared largely as opinions rather than scientifically gathered data. The need for an unprejudiced, accurate measure became more and more apparent as new teaching techniques appeared, or as research in other related fields indicated the need for change in the educational field, or simply as the changing world presented challenges at home, at school or in the community. Today, we still need to know how we are doing in education. Facts revealed through honest research will provide the measure by which we judge both past and present performances in order to plan constructively for the future.

For these reasons, I feel that the research projects undertaken through the Faculty of Education Research Committee and authorized by the University of Alberta will meet a real need in education. The publication of *The Alberta Journal of Educational Research* will carry the results of these projects to all persons vitally interested.

The Director of Research, through whose vision and tireless efforts over many years the new program has been brought into

being, and other cooperating individuals and groups deserve the warmest praise.

The Alberta Federation of Home and School Associations Incorporated extends sincere congratulations on the achievement of this program. We realize that its beneficiaries will be "our children".

Mrs. D. A. Hansen, President
Alberta Federation of Home and School Associations Incorporated

Research and teaching are properly regarded as twins, mutually assisting, reinforcing and supplementing each other. Even in education, where research must frequently be the collection and collation of facts, this is undoubtedly true.

For this reason the Faculty of Education is grateful to the cooperating organizations and to the Board of Governors of the University for making possible a continuous and sustained program of research and for the publication of this Journal. The Faculty is grateful particularly to the President of the University for his steady interest and constructive counsel.

For many years good research work has been done in the Faculty of Education. Unhappily no publication outlet has been available, in consequence of which library shelves tend to grow mouldy under research reports. In *The Alberta Journal of Educational Research,* reports on the more significant studies will from time to time appear. This should hearten research workers and enrich the fund of available knowledge.

In this enterprise we shall welcome the voluntary cooperation of competent workers within or outside the teaching profession. The Faculty staff is well qualified to assess the timeliness of proposed projects and to collaborate in their design and prosecution. We shall welcome research suggestions and support.

H. E. Smith, Dean
Faculty of Education

FACTORS ASSOCIATED WITH SCHOOL DROP-OUTS

ALBERT E. HOHOL

Principal, New Sarepta High School, New Sarepta, Alberta

The evidence of leading Canadian[1] and American[2] studies on school retention indicates that in the average public school system fifty per cent of the students who enter high school do not remain to graduate.

Incidence of Drop-Outs

Alberta's holding power is the highest in Canada. This must not be taken to mean that the drop-out problem in this province is not serious; it means only that Alberta compares favorably with the rest of Canada in holding power. Using fifth-grade enrolments as a base, census data[3] show that of 100 students who were in grade V in 1945, 42 reached grade XI in 1951 in Alberta. The comparable figure for Canada is 29. The Lazerte Report[4] showed that retention is best in Alberta, Saskatchewan, and British Columbia, in that order.

Further census data[5] show that in the ten Canadian provinces 57 per cent of urban children and 63 per cent of rural children, 15 to 19 years of age inclusive, are not attending school. The urban youth have completed 5.2 years of schooling, and the rural youth about 4.6 years. In 1951, of the 1,057,972 Canadian children from 15 to 19 years of age, 630,290 were not enrolled in schools, private or public.

In the United States, from 1946 enrolment data, it appears that of every 1,000 pupils who attended public elementary schools in grade V, only 453 were still in school when the final year of high school was reached. In terms of national totals, this means that each year a million to a million and a quarter children and youth are not completing high school. During the time required to complete one twelve-year cycle of schooling, somewhere between twelve and fifteen million children discontinue their education before the final year of high school. The range for the various states is very wide—from 204 high school seniors per 1,000 former fifth-grade pupils in one state, to 731 per 1,000 in another. In comparison, again employing the grade V enrolment, the Alberta survival rate index

1Canadian Education Association, **Your Child Leaves School**, p. 16.

2Harold J. Dillon, **Early School Leavers**, p. 9.

3Canadian Education Association, **First Report of the Canadian Research Committee on Practical Education**, p. 38.

4M. E. Lazerte, "Student Retention in Canadian High Schools", **The Alberta School Trustee** XXIV, p. 20.

5**Bulletin 11, Dominion Bureau of Statistics, 1951.**

is approximately 350 per 1,000. The index rate for Canada is approximately only 182 per 1,000.

Main Associated Factors

No one cause is responsible for school leaving. Many are forced by straitened financial circumstances to withdraw and go to work. Others lack sympathetic interest and encouragement at home. A few withdraw for health reasons, and some, especially girls, marry and drop out of school before reaching grade XII.

A very substantial reason for leaving school is that students become disinterested in or discouraged about their school programs. Young people will not remain in school if, rightly or wrongly, they believe that its program has little practical value for them. Such judgments are often in error, but young people themselves must be convinced of the worth of the school program if they are to remain voluntarily to complete it.

Although there is no single cause-and-effect relationship in the matter of dropping out of school, there are many selective factors that operate to determine how long a students remains in school. These factors, logically isolated, should operate differently at different levels. Low average intelligence should become a progressively more important factor as a child moves up through the high school grades. Attitudes, likes, and dislikes can hardly cause school leaving before age fifteen because of compulsory attendance laws. The operation of these attitudes is somewhat modified by the parents, but once the adolescent can earn his own money, his attitudes begin to determine behavior.

Different factors operate at different levels, and an absence of one does not preclude the operation of another. Many students who have high intelligence ratings quit school before graduation; when intelligence is not a factor, attitudes could still operate. Attitudes frequently relate to abilities and interests. A student who is mechanically inclined may drop out of a school if subjected to a narrowly academic curriculum. Did he do so because of the curriculum, or because of a cluster of abilities and interests?

It is apparent that the problem of early school leaving is concerned with a multiplicity of factors operating as a cluster. One investigator[6] of factors associated with school withdrawal had developed a list of 301; another[7] listed 85 which appeared to be most significant, and grouped them in these four categories: economic;

[6]Richard H. Dresher, **Factors in Voluntary Drop-Outs**, 1954, p. 24.

[7]A. E. Hohol, **A Review of the Evidence on the Problem of Why Youth Leave School**, p. 9.

achievement and ability; interests, likes and dislikes; personality and adjustment.

The following eight factors appear to be most closely related to early school leaving:

Economic status or occupation of parent

The evidence strongly indicates a relationship between economic status and dropping out of school, but a fatalistic view is not justified. Many children, despite economic handicaps, under effective guidance remain in school to improve their talents and win for themselves a good start in life.

Retardation, becoming overage

When the standards and policies of the school cause pupils to repeat grades and do work which they are hopelessly incapable of doing, the school produces extensive retardation which complicates the teaching situation. The elementary school must recognize its responsibility, for it contributes largely to the retardation which results in withdrawal from school. As absence, frequent transfers and health are related in a general way to this problem, an increasing sensitivity to these factors on the part of the elementary school is required.

Intelligence

If investigations of the drop-out problem have disclosed anything, it is that the intelligence of the drop-out is higher than most school administrators suspect, and that he has the mental capacity to do the work of the average high school. Teachers' marks, however, are a different matter; the drop-out fares worse than three-fourths of the graduates in this regard. This unfortunate paradox, average intelligence and poor marks, should awaken the schools to the curriculum needs and the guidance requirements of these young people.

It is evident from the results of many studies that low intelligence has been overrated as a primary cause of early school leaving. Many pupils did find the courses beyond their mental capacities and eliminated themselves or were eliminated by constant failures. It would be safe to say, however, that only a small percentage of adolescents are so deficient in mental ability that they cannot profit from some form of high school work.

Sex

Boys appear to leave school at an earlier age and in greater number than do girls (although the evidence is conflicting as to proportion). A notable difference from this trend in North America

occurs in England and Scotland, where the reverse is apparently the case.

Home status

The child who has reason to feel insecure or lacks the guidance and supervision of both parents is handicapped. He brings his problems and feelings to school, invariably with detrimental results. A home broken by death, divorce or separation markedly affects the lives of those in it.

Personality

Personal qualities such as a cooperative attitude, courtesy, dependability, ambition, self-confidence, initiative, leadership and resourcefulness are possessed by all pupils to some degree. In the few studies which attempted to discover whether these were related to the drop-out problem, the ratings were of necessity subjective. The evidence is, therefore, inconclusive.

Participation in extracurricular activities

Inasmuch as the extracurricular program helps to develop both vocational and avocational interests of youth, and makes significant contributions to the intellectual as well as the social development of young people, participation in this phase of the school program is regarded as an important factor in the holding power of the high school. These activities are the prestige and the fun phases of school life. Those who participate "belong" and are usually well adjusted and happy. The reverse is also true: the non-participating pupil is often unhappy and becomes a potential drop-out.

Pupil and parent attitude toward education

In the absence of a strong positive attitude toward education on the part of the pupil and parents the school has a formidable task in retaining young people until graduation.

Symptoms—How to Detect Drop-Outs

Dillon, Gragg and Tripensee[8] sought to determine which combination of factors notably associated with dropping out of school had predictive value. Is it possible to predict with any degree of accuracy whether a pupil will remain in school to graduate, or will drop from school because of his rating with respect to certain factors such as age, intelligence, economic status and retardation? It was thought that the school could institute certain adjustments in its program for those pupils of known vulnerability if it could be determined which factors primarily contributed to withdrawal.

[8]Ibid., p.1.

Predictive factors: Dillon's findings

1. Fairly consistent regression in scholarship from elementary to junior to senior high school
2. Frequent grade failures in the elementary school
3. High frequency of grade or subject failure in the junior and senior high school
4. Marked regression in attendance from elementary to junior to senior high school
5. Frequent transfers from one school to another
6. Evidence of a feeling of insecurity, or "lack of belonging" in school
7. Marked lack of interest in school work

It should be noted that economic need, while recognized as one of the causes related to dropping out, does not have the importance of the factors listed above.

Predictive factors: Gragg's findings

Gragg found the following factors as listed below:

Most significant	**Non-significant**
Retardation	Racial stock
Sex (boys 2:1)	Health status
Verbal intelligence	School attendance
School achievement (standardized tests)	School tardiness
Participation in extra-curricular activities	Personality ratings (home room teachers)
Membership in homes broken by divorce or death	Tenure of residence
Occupation of parents (managerial, clerical, professional and semi-professional more likely to be graduated)	Major subjects (English, mathematics, social studies and science)

According to Gragg, if one wishes to do something about drop-outs, he must obviously work well in advance of the time the pupil leaves school.

Predictive factors: Tripensee's findings

Tripensee studied various factors contributing to dropping out and found five which had high predictive value:

1. Ninth grade scholarship (School marks were averaged.)
2. Attitude toward graduation (This factor was rated high when the pupil showed an acceptance of the importance of a high school

education and a determination to complete high school even in the face of difficulties.)

3. General school adjustment (Many items including personality and social adaptability were considered.)
4. Age
5. I.Q. rating

Identification factors: Horowitz's[9] findings

Horowitz, a Philadelphia high-school principal, found that the following symptoms identify the drop-out:

1. Poor attendance
2. Poor reading ability
3. Subject failures
4. Personal maladjustment
5. Lack of active participation in school activities
6. Parental indifference, broken home or lack of parental control
7. Low financial status
8. Lack of interest in or dislike of a certain subject
9. Lack of warm pupil-teacher relationships

Identification factors: Nova Scotia guidance division[10]

The Nova Scotia guidance division selected eight leading symptoms of early school leaving:

1. Repeated failure in one or more subjects or grades
2. A consistently low record of achievement
3. Significant retardation in basic courses
4. Frequent absenteeism
5. Lack of participation in extracurricular activities
6. Indications of poor economic conditions at home
7. Indifferent or hostile attitude toward school
8. Behavior problems requiring frequent disciplinary action

Invariably, no single reason has been found as the cause for early school leaving. The same reasons are not operative in all communities; those which are common to a number of areas exert varying degrees of influence toward withdrawal. In general, there appears to be a multiplicity or cluster of factors.

Gragg reported that the failure of any criterion to measure absolute correlation between graduation and drop-out leads to the conclusion that dropping out is a result of several forces working concominantly. He states that any investigator seeking to gain a better understanding of the drop-out problem must shift from the traditional approach of endeavoring to isolate the causes of drop-out

[9]Lewis Horowitz, **Meeting the Drop-Out Challenge.**
[10]Nova Scotia Guidance Newsletter, **The Potential Drop-Out,** p. 7.

to a new one seeking factors which are most closely associated with the problem.

While no factor operates to the extent that all drop-outs fall on one side of the line and all graduates on the other, it is possible to establish critical points which differentiate between a majority of the graduates and a majority of the drop-outs.

How to Compute Drop-Outs

Since retardation and persistent failure appear to be the most prominent causes of dropping out, Stock[11] used grade-age placement and low marks to predict drop-outs. His procedure follows:

1. List all students in a grade alphabetically.
2. List age in years, months, as in September.
3. List for each an academic average made up of marks in English, social studies and mathematics.
4. Rank each from high to low average.
5. Record rank and average opposite each name.
6. Calculate age limits within which a child would be in a certain grade were he not retarded. Base this calculation on the student's age at entry in grade I.
7. Underline in red the names of all the students whose age is greater than the limits for September for the grade studied.
8. Underline in blue the names of students whose rank places them in the lowest quarter of their class.

The result is three groups:

1. Those whose names are not underlined and who are least likely to leave school before graduation.
2. Those underlined in red or blue (not both). These are possible school leavers who usually can be held if effort is put forth to save them.
3. Those whose names have been underlined in both red and blue. These are the most probable drop-outs. They can only be saved for graduation by a real effort on the part of the counselor, the faculty, and the administration.

What Can Be Done?

Various suggestions have been made for keeping pupils of high-school age in school. The recommendations of many studies are summarized here.

1. Develop a guidance program which is not limited to vocational matters but covers all the personal problems of youth. This

[11]Francis J. Stock, **A Quick Method of Predicting Drop-Outs.**

type of program requires the cooperation of the entire staff as well as the specialized knowledge of guidance experts. It should include a follow-up guidance service for those who must leave school.

2. Adjust the curriculum and methods of instruction to the abilities, needs and interests of the individual pupil. For some this may mean a part-time high school program integrated with part-time employment.

3. Provide facilities and service, including transportation, for rural areas.

4. Raise the age for compulsory education and raise the minimum age for employment. Provide means of enforcing the law.

5. Provide student aid for those who would be forced to leave school because of economic circumstances.

6. Raise the prestige of high school so that everyone will consider high school graduation a necessity.

Dillon offers several recommendations for reducing the number of drop-outs. Briefly, these are as follows:

1. Know the student as an individual.
2. Obtain the student's confidence.
3. Provide an educational program wherein the students can experience achievement.
4. Give grade repeaters new activities.
5. Demonstrate the relationship between education and life.
6. Provide occupational inclination.
7. Extend social experiences.
8. Give some personal recognition.
9. Provide for above-average students.
10. Establish a good record system.
11. Make use of the record.
12. Recognize signs of trouble.
13. Help students select the right courses.
14. Begin counseling early.
15. Allow time for home visits.
16. Secure parent interest and cooperation.
17. Secure public support.

The authors of *Improvement of Holding Power*[12] state that, reduced to its simplest form, the improvement of the holding power of a given school simply means better education. The statement appears fundamentally sound. If our schools are to serve better the needs of society and of those who now graduate, as well as the needs of those who now withdraw, the following changes are indicated:

1. There must be a broad acceptance on the part of parents and

[12]State Education Department, New York, **Improvement of Holding Power.**

teachers of the need for universal secondary education for all normal youth, and the formulation of a philosophy of education which accepts this thesis as fundamental to basic improvement.

2. The establishment of an adequate guidance program in all secondary schools must take place without delay. The varied interest and abilities of youth now attending high school make necessary a thorough study of each individual before the school can plan appropriate educational and vocational programs which will meet the needs of the individual pupils.

3. The implications of universal education should be obvious to the classroom teacher. Methods, techniques, materials and equipment must be adapted to the differences in individuals at both ends of the ability range. The pupil must also be accepted as a person and regarded as one possessing a normal yearning for achievement, recognition, security and new experiences.

There are needless barriers to complete adjustment in many of the practices existing in our schools today. By slavish adherence to tradition, we sacrifice the educational right and need of half of our youth.

4. Our curriculum does not sufficiently reflect social-economic changes nor the purpose of education in a democracy. Youth is practically unemployable until the age of eighteen; the schools should experiment until they find that combination of general and specialized education which will best meet the needs of those who terminate their education in high school.

5. If democratization of education is to be achieved, then the inconsistencies between philosophy and practice must disappear. Diploma requirements, standards, marking systems, promotion policies are all too often inconsistent with the schools' policy of education, thus forcing a pupil out of school.

Finally, the authors stress that it must be recognized that better holding power can come only from leadership—leadership of the entire high school faculty. Too many in the profession are not aware how low the holding power of the school is. There must be wide dissemination of information regarding the issues involved. Then and only then can there exist a public sensitive to retention and a profession determined to improve education opportunities for all youth. Leadership in education has made our schools what they are —the biggest investment any society has ever made for its greatest resource, its youth.

Recommended Research

The prime requisite for the study of drop-outs is uniform pupil accounting. School systems need to devise and agree on a plan for

a basic procedure in this phase of school administration. Such a procedure would make possible the collection of data concerning holding power, drop-outs, and school leavers. The data would also be available for purposes of comparison and for evaluating results of experimental or on-going curricular and administrative programs. This type of study can be done in any school, part of school, or school system.

A profitable study in which any school can engage is the determination of the extent to which such associated factors as retardation in basic courses, intelligence, parental occupation, repeated grade failure, frequent absenteeism, lack of participation in extracurricular activities, and behavior problems may be operative in its own system.

Another fruitful area requiring much examination is that of school costs. There is good evidence[13] to indicate that such costs, particularly as they pertain to hidden fees in membership dues, athletics, entertainment, crests and rings, graduation and other expenditures, do—especially in association with other factors—influence toward early school leaving.

Francis Stock's age-grade placement and low marks procedure to predict drop-outs is an excellent stand-by, and one that can be done comparatively easily and quickly by any teacher. While his technique is not foolproof, it gives the faculty and counselor something concrete in the way of knowing most of the probable drop-outs, often before the students themselves are aware that they are thinking about dropping out.

As a current study, the work conducted by Waldon Smith under the direction of Dr. Stanley Clarke of the University of Alberta will attempt a critical evaluation and validation of predictive criteria as set down in the study by this writer. The design is an intensive study of all the students of grades VII-XII in the Winfield School at one time, including attendance, retardation, intelligence, interests, attitude towards schooling, participation, personal adjustment, and socio-economic status of parents as well as parental attitude toward schooling. On the basis of these data the investigators will attempt to predict which students will drop out of school. Verification is possible in terms of actual drop-outs at the end of two years. A critical analysis of discrepancies will then follow.

This is a two-year study that will require the cooperation of the school faculty, the school board, the superintendent, and the parents. It is offered here as an example of what is possible in the field of investigation. If Smith succeeds in establishing predictive criteria

[13]Harold C. Hand, **Do School Costs Drive Out the Youth of the Poor?**, p. 104.

operative in his community, the school is in a position to take positive steps to retain its youth in school.

Most school systems are not set up to conduct elaborate research of this kind. But to be conscious of the seriousness of the problem, to take some steps to identify the drop-outs, and to keep them in school is within the scope of every school system. It is in fact a duty.

BIBLIOGRAPHY

Alberta Department of Education. Annual Report, 1952. Edmonton, Queen's Printer.

Canadian Education Association. "The First Report of the Canadian Research Committee on Practical Education." *Canadian Education* IV:2 (March, 1949). 92p.

Canadian Education Association. *Your Child Leaves School.* Second Report of the Committee, February, 1950. 127p.

Dillon, Harold J. *Early School Leavers, A Major Educational Problem.* New York, National Child Labor Committee, 1946. 94p.

Dominion Bureau of Statistics. Bulletin II. Ottawa, Queen's Printer, 1951.

Dresher, Richard H. "Factors in Voluntary Drop-Outs." *The Personnel Guidance Journal* (January, 1954). 63p.

Gragg, William Lee. "Some Factors Which Distinguish Drop-Outs from High School Graduates." *Occupations* (April, 1949).

Hand, Harold C. "Do School Costs Drive Out the Youth of the Poor?" *Progressive Education* 28 (January, 1951), pp. 89-93.

Hohol, A. E. *A Review of the Evidence on the Problem of Why Youth Leave School.* Unpublished Dissertation, Edmonton, University of Alberta, 1954. 279p.

Hollingshead, August B. *Elmtown's Youth.* New York, John Wiley and Sons, Inc., 1949. 480p.

Horowitz, Lewis. "Meeting the Drop-Out Challenge." *Viewpoints on Educational Issues and Problems.* Philadelphia, University of Pennsylvania, September, 1952. 382p.

LaZerte, M. E. "Student Retention in Canadian High Schools." *The Alberta School Trustee* 24:2 (February, 1954), pp. 19-23.

Nova Scotia Guidance Newsletter, *The Potential Drop-Out.* Department of Education, Bulletin 7:3 (February, 1953).

State Department of Education, New York. *Improvement of Holding Power.* The University of the State of New York, 1952. 56p.

Stock, Francis J. "A Quick Method of Predicting Drop-Outs." *Personnel and Guidance Journal* (January, 1954). 63p.

A SURVEY OF READING ACHIEVEMENT IN ALBERTA SCHOOLS

ANNE CARMICHAEL
Assistant Supervisor of Elementary Education, Edmonton City Schools
and
ROBERT E. REES
Superintendent of Schools, County of Grande Prairie No. 1

The Problem

The present curriculum in Alberta is so organized that for most children reading is a major tool of learning. It is therefore necessary that frequent appraisals of reading be made. Russell[1] contends that evaluation is one of the most effective ways of preventing crystallization or deterioration of an instructional program.

In May, 1953, Dr. R. E. Rees and Dr. G. M. Dunlop carried out a study of achievement in reading and language in Alberta. The survey was sponsored by the University of Alberta, approved by the Alberta Department of Education, and assisted by the Edmonton Elementary Teachers' Association. The data obtained from this survey was expected to reveal the levels of reading achievement in Alberta schools, the extent to which Alberta children approach the test norms, the nature of progress in reading after children leave the primary grades, and the relative achievement of pupils in different types of school organization in Alberta.

Many detailed investigations of the test data are in course of preparation. The present study is concerned with the gross results of the California reading tests administered in grades IV and VII. These data were expected to indicate whether or not the status of reading achievement in Alberta schools was comparable with reading achievements elsewhere, and whether or not it was uniform throughout the province. It was hoped, too, that the data might serve as a guide to teachers and school officials endeavoring to improve instruction in reading at all levels.

Related Studies

Despite the periodic charges of retrogression in present reading achievement, research indicates that pupils in today's schools attain higher scores in reading comprehension than did children attending schools thirty years ago.

Gray[2] administered the same tests in oral and silent reading to elementary pupils in Michigan in 1916 and again in 1948. He found

1N.S.S.E., **Forty-Eighth Yearbook**, Part II, p. 285.
2**Encyclopedia of Educational Research**, p. 996.

little or no superiority for modern schools in oral reading or in speed of reading, but distinctly higher scores in reading comprehension. Elizabeth Woods[3] compared reading achievement among sixth-grade pupils in Los Angeles between 1923 and 1933. Children of the later period had scores that averaged higher by half a grade. In 1948 Finch and Gillenwater[4] found that the teaching of reading in Springfield, Missouri, was more successful in producing the outcomes measured than it had been sixteen years before.

Although there has been but little reading research in Alberta, the Department of Education[5] compared the readings results of three thousand grade VI pupils in 1947 and in 1953. The 1953 sample showed a slight increase in reading achievement, but the increase was not statistically significant. It is hoped that the present survey will serve as a basis for comparative studies in the future..

Experimental Design

Since the testing of all elementary and junior high school pupils in Alberta was a physical and financial impossibility for the 1953 survey, it was decided to draw two thousand pupils from each of the two grades—IV and VII. Two hundred pupils from each grade were selected randomly from each of the five typical organizational units—large urban, small urban, town, graded rural and ungraded schools. Because of the similarity of conditions existing in the two urban areas, the committee in charge of the survey decided to combine the two into one sample.

In order to obtain a sample that would represent all types of Alberta school children, the committee divided the province into eight areas according to geographic, socio-economic and ethnic factors. Eight towns representative of these areas were randomly selected from those with a resident school population between 250 and 1,000. Lethbridge and Edmonton, representing two widely separated parts of the province, were randomly chosen to provide the urban sample.

The sample drawn from each area was roughly proportional to the total school population: for example, if twenty per cent of the town school population lived in a particular town, then twenty per cent of the town sample was drawn from that centre. It was not so simple to obtain a rural sample that would represent typical areas throughout the province. In order to make a valid comparison between reading achievement in graded and ungraded schools, only rural residents attending graded school could be used in the graded

[3]L. Raths and P. Rothman, "Then and Now," **N.E.A. Journal** 41, p. 214.
[4]**Ibid.**
[5]Alberta Department of Education, Curriculum Branch, report on file, January, 1954.

rural sample, while pupils of one-room rural schools composed the ungraded rural sample.

All pupils in each randomly drawn class were tested in order to forestall the selection of superior pupils. Surplus papers were withdrawn randomly by members of the survey committee before the tests were scored.

In order to ensure the most uniform conditions possible, all persons administering tests were given explicit instructions, and in some rural areas the superintendents administered the tests themselves. The test papers from the various schools in the sample were forwarded to Edmonton, where they were marked and scored. The results were posted to individual data cards which became a permanent file for future investigations.

From the information on the data cards, frequency tables were compiled for each of the eight samples in each of the thirteen sections of the reading tests. The freqency tables formed the basis for the statistical analyses of test scores.

The data were interpreted through the use of measures of central tendency and variability of each of the various groups in the sample. The size of the sample, almost two hundred in each group, justified the short method of calculating the mean scores for each section of the tests. In comparing the relative achievement of the four different samples of each grade, the differences between the mean scores were calculated and the critical ratio of each difference was tested against the table of *t*. The null hypothesis was rejected at the .01 and .05 levels of confidence.

The Testing Instruments

Form AA of the Elementary and Intermediate California Reading Tests was used in the 1953 survey of reading achievement in Alberta. Other tests might have given different scores, but they probably would have ranked the pupils in the same order. From a study of grade levels, Pflieger[6] concluded that the age-grade levels of individuals are dependent, in part, upon the particular test used.

The California Reading Test is designed not only to measure achievement, but to provide a basis for planning remedial instruction in the areas where individuals may be deficient. Each form of the test is divided into two parts: Reading Vocabulary and Reading Comprehension. The scores obtained on both parts are combined for a Total Reading score.

The vocabulary test for elementary grades consists of four subsections. Section A measures the ability to recognize the similarities

[6]E. F. Pflieger, "A Study of Reading Grade Levels," **Journal of Educational Research** 42, p. 541.

and differences in the printed forms of words. Test B measures the ability to identify words seen with words pronounced. The remaining subtests in Vocabulary, C and D, measure the extent of the pupil's knowledge of word meanings by requiring him to match words first with antonyms and then with synonyms.

The Comprehension part of the California Reading Test measures three reading skills—the ability to follow specific directions, the extent of the child's familiarity with reference and library skills, and the ability to interpret the author's meaning in material read. The comprehension section of the intermediate test parallels that of the elementary test, but the skills tested are at a higher level.

The vocabulary test for intermediate grades does not resemble its elementary counterpart. Words are drawn from four principal areas of the school curriculum—mathematics, science, social science and general vocabulary. Twenty words in each area are to be identified by matching each with antonyms selected from a list of four following words.

The California Reading Tests are highly regarded by experts in the field of reading.

> The Elementary Reading Test is especially well adapted for survey and diagnostic purposes. . . . The results can be readily comprehended, interpreted and applied by classroom teachers.
>
> The tests in the Intermediate series appear to satisfy the criterion of validity. The reliability, too, is adequate, and the diagnostic features of the test are admirably constructed. . . . At present these tests have no equal as practical survey and diagnostic instruments.[7]

Although the authors of the California Reading Test claim that it is a power test rather than a speed test, Flanagan[8] noted that one boy gained 1.2 grades in vocabulary and 3.5 grades in comprehension when he was allowed an additional eleven minutes to complete the test. Flanagan therefore recommended that the authors be more specific about timing the different parts of the test. However, he did support Witty's recommendation of the California Reading Tests as valuable instruments for appraising the progress of pupils in the important skills of vocabulary and comprehension.

The Status of Grade Four Reading Achievement in Alberta

The main purpose of the Alberta survey of reading achievement was to provide accurate and unbiased information about the reading performance of pupils on the basis of the California Reading Tests. Table I contains the mean scores, the standard deviations and the standard errors of the means for each of the four subsamples of grade IV pupils.

[7] **Third Mental Measurements Yearbook**, p. 15.
[8] **Fourth Mental Measurements Yearbook**, pp. 568-570.

TABLE I

MEAN SCORES FOR FOUR SUBSAMPLES OF GRADE FOUR PUPILS IN VOCABULARY, COMPREHENSION, AND TOTAL READING

Sample	Vocabulary			Comprehension			Total Reading		
	M.	S.D.	S.E.	M.	S.D.	S.E.	M.	S.D.	S.E.
URBAN	71.73	7.58	.41	26.50	5.79	.31	98.17	13.65	.73
TOWN	70.42	9.56	.66	26.31	5.63	.39	96.71	13.84	.96
G. RURAL	67.35	10.72	.73	24.17	6.21	.42	91.35	16.05	1.09
U.G.R.	62.75	12.85	.95	22.52	6.31	.47	85.61	18.05	1.33

Note: M—Mean; S.D.—Standard Deviation; S.E.—Standard Error of Mean.

In grade IV, urban pupils obtained the highest mean scores for each part of the reading test, while pupils in ungraded rural schools obtained the lowest mean scores in vocabulary, comprehension, and total reading. The reverse order prevails in the standard deviations, indicating that the greatest degree of variation from the mean exists in the sample from ungraded rural schools.

The differences between the means of the four subsamples were tested for significance against Fisher's table of *t*. The comparisons appear in Table II.

TABLE II

COMPARATIVE ACHIEVEMENT OF GRADE FOUR PUPILS IN VOCABULARY, COMPREHENSION, AND TOTAL READING EXPRESSED IN MEAN DIFFERENCES

Sample	Vocabulary			Comprehension			Total Reading		
	T.	G.R.	U.G.R.	T.	G.R.	U.G.R.	T.	G.R.	U.G.R.
URBAN—									
Dif.	1.31	4.38	9.13	.19	2.33	3.98	1.21	5.20	8.28
C.R.	1.69	5:23	6.26	.38	4.46	7.07	1.46	6.82	12.56
Sig.	.....	.01	.01	.....	.01	.01	.....	.01	.01
TOWN—									
Dif.		3.07	7.82		2.14	3.79		5.36	11.10
C.R.		3.12	5.05		3.73	6.21		3.69	6.77
Sig.		.01	.01		.01	.01		.01	.01
G. RURAL—									
Dif.			4.75			1.65			5.74
C.R.			3.01			2.62			3.34
Sig.			.01			.01			.01

Note: T.—Town; G.R.—Graded Rural; U.G.R.—Ungraded Rural.
Dif.—Difference; C.R.—Critical Ratio; Sig.—Significance.

The statistical analysis verifies the naive comparisons of reading achievement that appeared in Table I. Grade IV pupils in urban

and town schools exhibit superiority over pupils in graded and ungraded rural schools in vocabulary, comprehension, and total reading. All differences are significant at the .01 level.

Although the urban means for vocabulary, comprehension and total reading are superior to the town means, the differences were not significant in a single instance, and must therefore be attributed to accidents of sampling.

In the three subscores for reading, the graded rural means were significantly superior to those of the ungraded rural at the .01 level of confidence. In short, the analyses indicate that in the three measures of attainment in grade IV reading, urban and town pupils rank highest, graded rural pupils rank second, and pupils of the ungraded rural schools rank lowest.

The significance of a difference between means is contingent upon the homogeneity of the variance of the samples under comparison. From Table I it is evident that variability tends to increase especially as between the urban and town samples and the two rural samples. Since marked heterogeneity of variance invalidates the ordinary test of mean differences, the extent of the difference in variance was checked. In vocabulary all differences in variability were significant except for that between town and graded rural samples. In comprehension the differences were not significant. In total reading the differences between urban and town and graded rural and ungraded rural standard deviations are not significant. All other differences are significant to the .05 or .01 levels. Recourse to the Cochran and Cox test of the significance of the differences of means where the variance is not homogenous confirmed the earlier findings already indicated in Table II.

The Status of Grade Seven Reading Achievement in Alberta

Table III records the achievement of grade VII pupils in Alberta schools as measured by the California Intermediate Reading Test.

TABLE III

MEAN SCORES FOR FOUR SUBSAMPLES OF GRADE SEVEN PUPILS IN VOCABULARY, COMPREHENSION, AND TOTAL READING

Sample	Vocabulary			Comprehension			Total Reading		
	M.	S.D.	S.E.	M.	S.D.	S.E.	M.	S.D.	S.E.
URBAN	59.90	11.90	.64	35.65	7.56	.41	95.00	18.59	1.00
TOWN	59.73	10.95	.74	36.11	7.54	.51	93.80	16.50	1.14
G. RURAL	55.90	9.70	.76	33.84	6.21	.49	89.89	14.49	11.4
U.G.R.	52.24	11.85	.85	31.81	6.01	.57	83.72	19.50	1.37

Note: M—Mean; S.D.—Standard Deviation; S.E.—Standard Error of Mean.

Although the means of urban pupils are generally higher than those of the other three samples for grade seven, the mean in comprehension for town pupils is slightly superior to the urban. In all parts of the intermediate reading test both urban and town pupils have higher mean scores than either group of rural pupils, and pupils from graded rural schools have higher mean scores than pupils from ungraded rural schools.

TABLE IV

COMPARATIVE ACHIEVEMENT OF GRADE SEVEN PUPILS IN VOCABULARY, COMPREHENSION, AND TOTAL READING EXPRESSED IN MEAN DIFFERENCES

Sample	Vocabulary			Comprehension			Total Reading		
	T.	G.R.	U.G.R.	T.	G.R.	U.G.R.	T.	G.R.	U.G.R.
URBAN—									
Dif.	1.97	4.00	7.66	–.48	1.79	3.82	1.20	5.11	11.28
C.R.	2.01	4.03	7.20	.73	2.80	5.45	.79	3.37	6.59
Sig.	.05	.01	.01	.....	.01	.01	.....	.01	.01
TOWN—									
Dif.		2.03	5.69		2.27	4.30		3.91	10.08
C.R.		1.91	5.05		3.21	5.62		2.43	5.61
Sig.	.....	.01	.01		.01	.01		.05	.01
G. RURAL—									
Dif.			3.66			2.03			6.17
C.R.			3.21			2.70			3.43
Sig.			.01			.01			.01

Note: T.—Town; G.R.—Graded Rural; U.G.R.—Ungraded Rural.
Dif.—Difference; C.R.—Critical Ratio; Sig.—Significance.

The pattern of relative achievement established in grade IV is maintained generally in grade VII, with the four subsamples ranged in descending order from the urban sample through town and graded rural to ungraded rural. Contrary to the grade IV pattern of increasing variability of scores from urban through rural samples, the grade VII findings reveal no marked directional tendency of standard deviations.

The urban sample was significantly superior to the town sample in vocabulary. The differences between urban and town achievement in comprehension and reading were so small as to be attributable to sampling errors. In comprehension the town supassed the urban mean, although the difference was not significant. The urban mean was significantly higher than the graded and ungraded rural means for all three scores. The town surpassed the rural samples in all scores except one. Only in vocabulary did the town approach the graded rural mean to the point that the difference was not significant. The graded rural sample was significantly superior to

the ungraded rural sample in achievement in vocabulary, comprehension and total reading.

Again, as in the case of the grade IV findings, mean differences accompanied by significant differences in standard deviation were checked by the Cochran and Cox test. No alteration in findings resulted.

In addition to the three major areas of the reading test for each grade, subscores were recorded and compared. The salient features of reading achievement among Alberta pupils that were evident from major scores were evident also from the seven subscores for the reading tests in each grade. These features were the general superiority of urban and town achievement, and the superiority of graded rural reading attainment over ungraded rural.

In attempting to account for the pattern of achievement established by the four types of educational organization in Alberta it is well to consider the factors known to influence reading achievement generally. Those most often mentioned in research are capacity to learn, nature of instruction, type of environment, interest in reading, and availability of reading material.

Gates[9] attaches considerable importance to environment, but many studies place intelligence first in the list of influential factors. Gray[10] concluded that the correlation between general intelligence and general reading ability is highest in the fourth grade, relatively high in the fifth and sixth, and somewhat lower in the seventh and eighth. In another study Gray[11] concluded that reading achievement was particularly influenced by the efficiency of individual teachers, while Carillo[12] is reported to have found that superior reading ability was consistently associated with a small family, the number of books in the home, and a favourable attitude of the child toward school.

It might be assumed that the same factors influence reading achievement in both grades of the different Alberta groups tested. From Reid's study of the intelligence of the Alberta sample as measured by the California Test of Mental Maturity, it was found that mean scores for intelligence ranked the four subsamples in descending order from urban through town and graded rural to ungraded rural. This evidence appears to indicate that the superior reading achievement displayed by urban pupils may be influenced by a slight superiority in mental capacity.

In addition to intelligence, the type of instruction received by

[9]N.S.S.E., **op. cit.**, p. 8.
[10]W. S. Gray, "Summary of Reading Instruction, July 1, 1951, to June 30, 1952," **Journal of Educational Research** 46, p. 407.
[11]**Encyclopedia of Educational Research**, 1950, p. 979.
[12]**Gray, op. cit.**, p. 417.

the different groups of pupils in Alberta schools is probably an important factor in reading achievement as measured by the California Reading Tests. Ungraded rural schools in Alberta find it increasingly difficult to obtain or retain competent teachers because of the availability of positions in graded schools. Superintendents[13] report that improved classroom accommodation and more congenial teaching conditions in centralized schools are reflected in the quality and results of instruction.

Children tend to be conditioned by their environment. The lower level of reading achievement exhibited by rural children generally, as compared to urban and town children, may reflect an environment which directs their interests to the many activities of farm life, leaving little leisure time for the recreational reading so necessary for progress in reading achievement. The extent to which the scores of town pupils approximate the scores of urban pupils, particularly in reading comprehension, might indicate that there is no marked difference in the factors influencing reading achievement in both groups.

Although the pattern of reading achievement established in grade IV is reflected in the grade VII results, there are certain features of grade VII reading achievement which suggest the presence of influential factors peculiar to that grade. Table III reveals less evidence of a consistent pattern or direction of increase in variability in grade VII than was apparent in the grade IV sample.

The lack of consistency within the grade VII groups could be attributed to the tendency to discontinue formal reading instruction as pupils advance through the upper elementary grades, to the increased variety and complexity of the reading skills required at these grade levels, to the difficulty encountered when the carefully controlled and gradually increased vocabulary of the basic readers in the primary grades is replaced by a wide variety of material in which the vocabulary is relatively uncontrolled, and to the increasing range of reading levels that tend to develop unless a thorough program of developmental reading is carried on throughout the elementary grades.

The tendency to discontinue systematic reading instruction permits individual pupils to proceed at their own pace, and so increases the range of performance within a class, while the increase in retardation tends to lower the mean scores of pupils in the upper elementary grades. Wheeler[14] found that the amount of retardation increases in grades IV through VIII. Kottmeyer[15] found that 2,169

[13]Alberta Department of Education, **Forty-Seventh Annual Report**, p. 21.
[14]Margaret L. Kayser, "Research in Reading in the Elementary School," **Review of Educational Research** 22, pp. 65-75.
[15]W. Kottmeyer, "Improving Reading Interests in the St. Louis Schools," **Elementary School Journal**, September, 1944, p. 37.

out of 7,380 eighth grade graduates read below the norms for the sixth grade.

Comparison of Alberta Reading Achievement with the Test Norms

In order to evaluate properly the status of reading achievement in Alberta, the results were compared with the norms supplied by the authors of the California Reading Tests. The differences between the means for each Alberta group and the norms for each of the three major sections of the tests for grades IV and VII are recorded in Table V. A minus sign before a difference indicates that the Alberta mean was below the test mean in that particular subtest; in all other cases the difference favoured the Alberta subsample named at the left of the table. The critical ratio for each difference is noted except in the cases where the difference is noticeably greater than one for which a significant difference at either the .01 or the .05 level of confidence has been indicated already.

TABLE V

A COMPARISON OF ALBERTA AND CALIFORNIA MEANS FOR VOCABULARY, COMPREHENSION, AND TOTAL READING EXPRESSED IN RAW SCORE UNITS

CALIF.	URBAN		TOWN		GR. RURAL		UNGR. RURAL	
Mean	M.	Dif.	M.	Dif.	M.	Dif.	M.	Dif.
GRADE IV								
VOCAB. 63	71.73	8.73	70.42	7.42	67.35	4.35	62.60	–.40
C.R.						5.87		
Sig.		.01		.01		.01		.04
COMP. 19	26.50	7.50	26.31	7.31	24.17	5.17	22.52	3.61
C.R.								.....
Sig.		.01		.01		.01		8.18
TOTAL								.01
READING..... 82	98.17	16.17	96.71	14.71	91.35	9.35	85.61	3.61
C.R.								2.73
Sig.		.01		.01		.01		.01
GRADE VII								
VOCAB. 54.5	59.90	5.40	57.93	3.20	55.90	1.40	52.24	–2.26
C.R.				4.32		1.81		2.59
Sig.		01		.01		.....		.01
COMP. 32.5	35.65	3.13	36.11	3.63	33.84	1.34	31.81	–69
C.R.						2.73		11.8
Sig.		.01		.01		.01		.....
TOTAL								
READING ... 87.5	95.00	7.50	93.80	6.30	89.89	2.49	83.72	–3.80
C.R.				5.43		2.14		3.68
Sig.		.01		.01		.05		.01

Note: M—Mean; Dif.—Difference; C.R.—Critical Ratio; Sig.—Significance. The minus sign—a difference in favor of the California norms.

Table V indicates that Alberta reading achievement generally is above the norms for the test, but there are a few exceptions. In vocabulary for grade IV the difference between the means of ungraded rural pupils and the California pupils is not significant at the .05 level of confidence. In grade VII vocabulary and total reading for the ungraded rural sample, the differences favor the California pupils at the .01 level of confidence.

The extent to which Alberta means exceed the test means, particularly in grade IV, shows the superiority in achievement on the California Reading Tests of the Alberta samples as compared with the normalization sample. Grade VII pupils in Alberta do not exhibit the same degree of superiority over the test means as their counterparts in grade IV. While the Alberta grade IV pupils from ungraded rural schools are above the test norms in Comprehension and Total Reading, their counterparts in grade VII are significantly below the tests norms in Vocabulary and in Total Reading. No significant difference was revealed between the California norms and the grade IV ungraded rural score in Vocabulary, the ungraded rural score in Comprehension, or the graded rural school in Vocabulary in grade VII.

Although the manuals for the California Reading Tests supplied no norms for the subscores in reading, the writers obtained a grade level score by drawing a line across the profile on the back of the test at the 4.9 level for grade IV and at the 7.9 level for grade VII. A comparison of the Alberta means for the subtests with this obtained California mean gave some indication of Alberta achievement on the subtest in relation to California grade-level scores.

Alberta pupils in grade VII do not appear to exceed the California pupils on the subtests so markedly as do Alberta pupils in grade IV. Grade VII pupils from ungraded rural schools in Alberta are below the California grade-level scores in all the subtests except the fifth, which measures the ability to follow specific directions. In mathematics vocabulary, social science vocabulary, general vocabulary and reference skills Alberta grade VII pupils generally are achieving close to the average for tests; but in science vocabulary, interpretations, and the ability to follow explicit directions urban and town pupils are above the test averages. In mathematics vocabulary, general vocabulary and reference skills Alberta pupils are closest to the average performance for the 7.9 grade level.

Among other things, the findings noted above may indicate a difference in emphasis on certain reading skills between California schools and Alberta schools. It could be, too, that the California Reading Test is not "culture free". Many of the items to be read

for questioning on content involve information about American affairs which, because of its familiarity, would be easier for an American student to read than for a Canadian.

However, if it is assumed that the California Reading Tests constitute an objective yardstick for measuring the reading achievement of Alberta children, two conclusions seem inevitable. First, reading achievement is highest in the urban sample, diminishing through town and graded rural to the ungraded rural sample. Second, the rate of increment in reading achievement is higher from school beginning to grade IV than it is from grade V to grade VII.

The second conclusion is not entirely unexpected. Diminishing progress in reading achievement from grades IV through VIII was noted by Wheeler[16] when she evaluated reading instruction from grades I to XII in Alabama. This trend would seem to indicate the need for prolonged formal reading instruction and for remedial work in the upper elementary grades, with continued attention to vocabulary in all areas of the curriculum.

> At one time reading was considered a general ability and achievement as appraised by general reading tests. . . . The basic premise underlying such procedures at any level, however, has been refuted by research. . . . While there are reading skills common to the various areas of the curriculum, there is enough difference in the nature and pattern of the skills characteristic of each area to warrant specific instruction. . . . Reading skills should be developed and applied systematically in every content field at all school levels. . . . Daily learning activities with subject matter materials provide the best opportunity for developing these skills.[17]

Alberta pupils in grade VII are achieving close to the average for the test in general vocabulary as well as the vocabulary of science and mathematics. In comparison with the achievement in grade IV it would appear that vocabulary development is not receiving sufficient emphasis in the upper elementary grades. Research suggests the importance of vocabulary in all reading achievement. "The possession of a rich fund of word meanings is prerequisite to adequate comprehension and interpretation in reading," says Berry.[18] G. H. Hilliard[19] supports her views.

D. H. Russell[20] believes that teachers can strengthen two factors influencing comprehension—meaning vocabulary and background experiences.

In two of the grade IV subtests in vocabulary an unusual distribution appeared. In word form, 74 out of 196 pupils in urban schools and 50 out of 183 pupils in ungraded schools had perfect scores. In

16Keyser, **loc. cit.**
17Elona Sochor, "Special Skills Needed for Reading Social Studies, Science and Arithmetic," **The Reading Teacher**, March, 1953, p. 6.
18N.S.S.E., **Forty-Eighth Yearbook**, Part II, p. 172.
19**Encyclopedia of Educational Research**, p. 966.
20D. H. Russell, **Children Learn to Read**, pp. 80-81.

word recognition, 107 urban and 44 ungraded rural pupils had perfect scores. Since the curves for word recognition skills are so decidedly skewed to the left, it may be assumed that these subtests do not measure Alberta achievement adequately.

The above conclusion is based on naive comparison only, but two investigators applied statistical procedures in examining the frequency distributions of the grade VII samples for vocabulary, comprehension and total reading. They found that the distributions for this grade exhibited no significant abnormalities except for comprehension in the case of the town sample. This distribution was definitely skewed to the left, and the investigators concluded that the negative skewness was due to some real but unknown causes. They recommended that this sample be retested with another form of the California Reading Test.

Conclusions

Analysis of the data obtained from the survey of reading achievement in Alberta led to the following conclusions:

1. Achievement in reading in grade IV shows the urban sample as superior, closely followed by town sample, then by the graded rural, and last, the ungraded rural sample.
2. This ranking is maintained for Total Reading, Vocabulary and for Comprehension.
3. The superiority of achievement of the urban and town samples over graded rural and ungraded rural samples is significant at the .01 level.
4. Achievement in reading in grade VII reveals the same result as in grade IV, with urban leading, followed by town, graded rural, and ungraded rural.
5. Only in Comprehension scores is there a departure from the above order. In this instance the town sample is slightly superior to the urban.
6. Variability in mean achievement in reading in grade IV increases from urban, through town, graded rural, and ungraded rural samples. No comparable pattern of variability is evident in the grade VII mean scores.
7. With one exception, the grade IV mean scores for the four Alberta samples are all superior to the California norms in Total Reading, Comprehension and Vocabulary. The exception is the ungraded rural sample, which follows below the California norm for Vocabulary.
8. The grade VII mean scores for the Alberta urban, town and

graded rural samples are superior to the California norms in Total Reading, Vocabulary and Comprehension.

9. The Alberta ungraded rural sample falls below the California norms in Total Reading, Vocabulary and Comprehension.
10. Comparisons with the California norms make it evident that reading achievement in Alberta from beginning grade I to grade IV is quite satisfactory, being in excess of a year's progress for each year of attendance.
11. The rate of progress in reading in Alberta between school entrance and grade IV is superior to the corresponding rate of progress in grades V, VI and VII in terms of grade placement on the California norms.

Recommendations

The writers are of the opinion that educators still face the challenging task of raising the reading competence of all Alberta school children so that they may read with increased independence and understanding in the content fields. Their recommendations follow.

1. The Alberta Government should do everything in its power to induce qualified and experienced teachers to accept positions in ungraded rural schools. The inducement might take the form of isolation bonuses, suitable living accommodation and more attractive schools.
2. The practice of organizing graded rural schools and providing transportation to them for rural children should be continued and extended in order that rural children may benefit from the more effective instruction offered in graded schools.
3. The status of reading achievement in all grades should be appraised at frequent intervals to determine the amount of progress and to prevent deterioration.
4. Consideration should be given to the desirability of prolonging systematic reading instruction into the junior high school, and the utilization of diagnostic procedures and remedial teaching where required in the senior elementary and junior high schools.
5. The workbooks accompanying the authorized basic texts should be examined and evaluated to make certain that the exercises provided for the pupils are designed to develop desirable reading skills rather than to provide a type of "busy work".
6. An effort should be made to enlist home and community support for a program of recreational reading among pupils of the upper elementary grades in all areas of Alberta where reading achievement is found to be below a reasonable standard.

Since frequent evaluation and appraisal of reading achievement and progress is not only desirable but imperative, the need for Alberta norms becomes apparent. The writers recommend the establishment of Alberta norms for the California Reading Tests. With provincial norms as a basis for comparison, future investigations might reveal the effect of prolonged systematic instruction on reading achievement.

BIBLIOGRAPHY

Alberta Department of Education. *Annual Reports,* 1947, 1950. Edmonton, Queen's Printer.

Anderson, John E. "Methods of Child Psychology," *Manual of Child Psychology.* New York, Wesley and Sons, 1946.

Broom, M. E., and others. *Effective Reading Instruction in the Elementary School.* New York, McGraw-Hill Book Company, 1942.

Buros, Oscar K., ed. *The Third Mental Measurements Yearbook.* New Brunswick, Rutgers University Press, 1940.

Buros, Oscar K., ed. *The Fourth Mental Measurements Yearbook.* London, Gryphon Books Ltd., 1953.

Caldwell, O. W., and Courtiss, S. A. *Then and Now in Education.* New York, World Book Company, 1924.

California Test Manual. Los Angeles, California Test Bureau, 1950.

Clark, W. W. *A Technical Report.* Los Angeles, California Test Bureau, 1950.

Durrell, D. D. *Improvement on Basic Reading Abilities.* New York, World Book Company, 1940.

Encyclopedia of Educational Research. New York, The Macmillan Company, 1950.

Finch, F. H., and Gillenwater, W. W. "Reading Achievement Then and Now." *Elementary School Journal* 49:8 (April, 1949).

Garrett, H. E. *Statistics in Psychology and Education.* New York, Longmans Green and Company, 1946.

Gerberich, R. J. "The First of the Three R's." *The Phi Delta Kappan* 23:7 (March, 1952).

Gray, W. S. "Summary of Reading Instruction, July 1, 1951, to June 30, 1952." *Journal of Educational Research* 46:6 (February, 1953).

Gray, W. S. "What Is the Evidence Concerning Reading?" *Progressive Education* 29:3 (January, 1952).

Kaplan, L. "The Attack on Modern Education." *The Phi Delta Kappan* 22:5 (January, 1951).

Keyser, Margaret Lee. "Research in Reading in the Elementary School." *Review of Educational Research* 22:2 (April, 1952).

Kottmeyer, W. "Improving Reading Interests in the St. Louis Schools." *Elementary School Journal* 44:1 (September, 1944).

Lindquist, E. F. *Statistical Analysis in Educational Research.* Boston, Houghton Mifflin, 1940.

National Society for the Study of Education. *Forty-Eighth Yearbook,* Part II. Chicago University Press, 1949.

Pflieger, E. F. "A Study of Reading Grade Levels." *Journal of Educational Research* 42:7 (March, 1949).

Raths, L., and Rothman, P. "Then and Now." *N.E.A. Journal* 41:4 (April, 1952).

Russell, D. H. *Children Learn to Read.* Boston, Ginn and Company, 1949.

Sochor, E. E. "Special Reading Skills." *The Reading Teacher* (March, 1950).

Sochor, E. E. "Special Skills Needed for Reading Social Studies, Science, and Arithmetic." *The Reading Teacher* (March, 1953).

Tait, A. T. *Bulletin No. 8.* Los Angeles, California Achievement Test Bureau, 1950.

Taylor, Christine D. *Studies in Reading,* Vol. 2. London University Press, 1950.

Tiegs, E. W. *California Test Manual.* Los Angeles, California Achievement Test Bureau, 1950.

True, J. A. "A Study of Interpretation in Reading." Master's thesis, Chicago University, 1922.

Walker, Helen. *Elementary Statistical Method.* New York, Henry Holt and Company, 1953.

Witty, P., and Coomer, Ann. "How Successful is Reading Instruction Today?" *Elementary English Journal* 28:8 (December, 1951).

Whipple, Gertrude. "Questions and Answers about Teaching Reading." *N.E.A. Journal* 41:6 (September, 1952).

A COMPARATIVE STUDY OF PUBLIC AND PRIVATE OWNERSHIP OF SCHOOL BUSES IN ALBERTA

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The conveying of our boys and girls to school is an integral and vital part of the educational program in rural Alberta. Chief among the problems of pupil transportation is that of the ownership of buses. Specifically, should school buses be publicly or privately owned?

During the past few years the divisional boards have been so concerned with bulding schools that transportation has not received much consideration. In the main, ownership has been determined by expediency with little regard to the results of cost accounting or to the experience of others. However, with school transportation in Alberta now costing well over a million dollars a year, many school boards are trying to decide whether to own and operate their own buses or to use buses owned privately.

There has been relatively little systematic study of bus ownership in Alberta. Although individual boards are now attempting to analyze their own costs, there has apparently been no research on a provincial basis. It is of course to be expected that as time goes on the school divisions will keep more detailed and accurate records of bus operation and that more detailed information will be gathered yearly by the Department of Education. Those data should provide bases for continuing research.

The present investigation is an attempt to arrive at a tentative solution to the problem of ownership. Two kinds of evidence will be considered: research studies from the United States, and data from the Department of Education and selected school divisions in Alberta. Standards of service, cost, and administration will be used as criteria. Trends will be indicated.

Ownership of School Buses in the United States

In the U.S.A., ownership of school buses has become a major problem, with the result that there have been many investigations at national, state, and county levels. A study of this literature throws light on the Alberta problem.

Cost

Of the writers in the field of pupil transportation, two are outstanding, A. C. Lambert and M. C. S. Noble. Both have written

books which are now accepted as standard works on transportation. Lambert's book is cited below, and a letter received from him states his conclusions boldly. He says in part:

> I have assembled the facts on the issue since 1932. So also have other students of the matter. The evidence is perfectly clear. The city of Los Angeles has just this year had an object lesson, long to be remembered, on the excessive cost of operating pupil transportation by the method of private contract. I proved the same thing in a number of direct studies in Utah school districts.[1]

The over-all conclusions relative to bus ownership reached by M. C. S. Noble are evident in the following:

> Since 1925 more than a dozen highly comprehensive surveys have been conducted to determine the difference in costs which occur as the result of different methods of operation. Briefly summarized, all of these studies... indicate that contract methods are much more expensive than school ownership.[2]

Individual state surveys tend to confirm this view. In Oregon, for example, there are about 1,500 school buses in operation, of which about seventy-five per cent are publicly owned. The privately owned buses are reported to cost approximately twenty per cent more to operate than those publicly owned. In Iowa, available figures indicate that publicly owned buses cost ten dollars per pupil per year less to operate than those privately owned.

An extensive summary of research on bus ownership in the United States before 1940 is given by A. R. Meadows of Montgomery, Alabama. This summary includes reference to studies made in thirteen of the forty-eight states to determine the relative cost of privately owned and publicly owned buses. Of eight separate and independent studies carried out within these states, the steady conclusion was that the cost of operating publicly owned buses is less than that of operating privately owned buses.[3]

Indeed, this conclusion seems to represent what all investigators and authorities now state with respect to the cost of operation of school buses. No literature has come to the writer's attention which claims the opposite.

Safety

Authoritative opinion in the United States on the comparative safety of operation of publicly owned and privately owned buses is well represented by Noble, who writes:

> The author of this text, after visiting rural schools in forty states, is of the opinion that the average contract bus is markedly inferior to the average school-owned bus.[4]

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[1] A. C. Lambert, letter to author.

[2] M. C. S. Noble Jr., **Pupil Transportation in the United States**, p. 203.

[3] A. R. Meadows, **Safety and Economy in School Bus Transportation**, pp. 179-194.

[4] Noble, **op. cit.**, p. 201.

In the state of Wisconsin it was found that privately owned buses consistently failed to meet the equipment standards maintained by district-owned and jointly owned buses. Similarly in Alabama it was found that thirty-eight per cent of publicly owned buses were of all-steel construction, while seven per cent of privately owned buses were of all-steel construction.

Letters received from directors of school transportation in the various states express the opinion that publicly owned buses are safer than privately owned buses. No evidence has been found to the contrary.

Administration

> The administrative arguments of keeping machinery functional to program and purposes, flexibility, organizational efficiency, lines of authority and check up, etc., are all on the one side, that of public ownership of buses. Of course, if the administration is uninformed, or is unwilling to take over the work which is properly theirs, that is another matter for some local case. The thing to do then is to change the administration, or educate it.[5]

Here again the prevailing opinion among authorities is that buses should be publicly owned. Better control is the main argument: publicly owned buses can be routed or rerouted as necessary and used flexibly for such things as field trips. Some school boards, it is true, appear loath to change to publicly owned buses because they believe their administration problems would increase. But this concern has no authoritative support.

Trend in ownership

Investigators have been anxious to find out how the percentages of publicly owned and privately owned buses have been changing in various states. Information was received from Minnesota, Kentucky, Iowa and Montana which showed a marked trend toward public ownership. The Office of Education, Washington, D.C., publishes a statistical sheet showing the number of buses in the United States which are publicly owned and the number privately owned. In 1950 there were approximately 100,000 buses in the United States, with 60,000 of them publicly owned.

A recognized authority on school transportation, E. Glenn Featherston, estimates that during the past ten years there has been a change from about forty per cent public ownership to more than sixty per cent public ownership of school buses. He estimates that in another ten years—as the advantages of public ownership become more fully recognized—there will be relatively few privately owned buses in the United States.[6] According to Noble's study of the

[5]Lambert, letter to author.

[6]E. Glenn Featherston, **Public versus Private Ownership of School Buses.**

forty-eight states, two-thirds of the school superintendents have declared a preference for school-owned buses.[7]

Ownership of School Buses in Alberta

For this phase of the investigation, information was received from the Department of Education on all of the school divisions in Alberta. More detailed information was secured by visiting the offices of five school divisions in southern Alberta. These five have had more experience than most of the others. Three of them, Lethbridge, Macleod and Foremost, rank first, second and third in the province for number of buses operated. Two of them, Taber and St. Mary's River, rank fifth and sixth. Further, these five are representative both of the thickly populated and sparsely populated regions, and of all-weather and dirt roads.

Service

Comfort. During the last few years there has been a marked improvement in the type of bus used by the divisions. For instance, in the five divisions studied it was found that there are no longer any half-ton trucks with home-made boxes. However, many students still ride to school in buses that the Alberta Highway Traffic Board classifies as B and C class conveyances. Mostly, these are one-ton chassis with panel bodies. The seats usually run lengthwise. In some cases the seats are padded, or perhaps the window space is increased. Aside from these panel bodies, there are many locally built bus bodies made wholly or mainly of wood and usually with longitudinal seats. In the main, an A class bus is factory built with all-steel body, padded cross seats, ample window space with safety glass, proper heatng and ventilation. Clearly, a bus of this calbre is more comfortable than is a B or C class bus.

For purposes of comparison, a check was made of all buses operating in the five southern school divisions to discover the number of class A buses publicly owned and the number privately owned. It was discovered that twenty per cent of the privately owned buses are class A, while fifty-six per cent of the publicly owned buses are class A. These figures would seem to indicate that where publicly owned buses are operated the youngster has nearly three times the chance of riding in a bus that qualifies for the A category than he would if he rode in a privately owned bus.

Information was received from a school bus company in the city of Lethbridge relative to the sale of various type buses to school divisions and to private contractors. The figures indicate that private individuals bought more of the small type factory or panel

[7]Noble, up. cit., p. 209.

buses and the divisions bought panels and larger buses. In some areas the lighter buses are no doubt better because of road conditions or sparsity of population or some other factor. But regardless of road or other conditions, private individuals did not buy the large buses. This means, of course, that where private buses were used the standard of comfort was lower.

Safety. Among the major factors determining the safety of a school bus are the age of the body, the type of body, and the driver.

Board members, parents and teachers differ in their opinions about the driver as owner and as non-owner. It is said, on the one hand, that if a driver owns his bus he will exercise judicious care in maintaining and driving it; on the other hand, that the driver of a public bus does a better job because in the first place he was chosen and perhaps trained as a driver. A further argument for public ownership is that the driver is completely under the control of the board—he may, for example, be easily dismissed. There is, however, no objective evidence to show any relationship between safe drivers and ownership of buses. Until proved otherwise it may be assumed that the proportion of good and poor drivers is the same for publicly owned buses as for privately owned buses.

It might be noted here that high school students have from time to time been used as drivers. Ambrose in an exhaustive study found that these students may be safely and economically used as school bus drivers provided they are carefully chosen, given definite training, and properly supervised.[8]

Evidence concerning the type of body in use by division and private owners in Alberta may be found in the study made by the Highway Traffic Board. Under the direction of C. J. Kenway, Technical Adviser, Highway Traffic Board, a report on the school bus situation in the province of Alberta was written in 1947. After a detailed check of 297 buses it was found that of the publicly owned buses sixty-nine per cent were A or B category, while of the privately owned buses forty-three per cent were in A or B category. Since the sample included nearly half the buses in the province, it indicates that school boards were operating a larger percentage of safer buses than were the private owners.

No study is available concerning the age of the publicly owned bus compared to the age of the privately owned bus. The school division secretaries, by and large, do not keep a record of the ages of private buses, which means that the investigator must interview each operator to determine the age of his bus. One private operator

[8]P. S. Ambrose, **The Use of High School Students as School Bus Drivers**, concluding chapter.

in the Lethbridge School Division operates a fleet of fourteen buses. It was found that the average age of his buses at the time of the investigation was 7.6 years. On the other hand it was found that the average age of the twenty-four buses owned and operated by the Lethbridge School Division was 2.5 years. That is, the privately owned buses were about three times as old as the publicly owned buses in this instance.

General efficiency. A questionnaire on bus ownership was returned by eleven principals in the Lethbrdge School Division. Serving their schools are fifty-five buses—twenty-five of them owned by the division and thirty privately owned. Eight of the principals claimed that publicly owned buses were more comfortable than those privately owned. Three saw no difference. Five thought publicly owned buses were more reliable. Two thought the privately owned buses were more reliable. Four found no difference. Eight thought the publicly owned buses could be better controlled by school authorities. Three saw no difference. Eight of the principals gave as their over-all choice publicly owned buses while three preferred privately owned buses.

Opinion was solicited also from ratepayers in the Lethbridge School Division. One hundred questionnaires were circulated among the ratepayers of eleven central schools. Fifty-three completed questionnaires were returned from nine of these schools. Unfortunately only five of the questionnaires came from ratepayers where both publicly owned and privately owned buses were used. All five, however, voted in favor of the publicly owned buses. The remaining questionnaires in general revealed more satisfaction from publicly owned buses than from privately owned buses.

To secure evidence on the reliability of both types, a check was made of bus reports in the Lethbridge School Division. This check covered 730 separate sheets which made up the record for the full year from January to December, 1950. The purpose of the check was to reveal the number of days missed by each bus, and the number of lates. The evidence, however, was not conclusive. Each bus, regardless of ownership, recorded an average of six lates for the whole year. Also, each recorded about four days missed each year.

Advantages of divisional buses were summarized as follows by the president of the Alberta Divisional Secretary-Treasurers' Association at their annual short course in June, 1948:

1. Better, more comfortable vehicles.
2. More direct and efficient control by the board.

3. No haggling over changes in route, increased mileage, bad roads, et cetera.
4. Continuity of service is assured.[9]

Cost

In Alberta there has been very little systematized cost accounting relative to school buses. It appears that complete and meaningful records showing the cost of operating public school buses in Alberta do not exist. However, to get a view of provincial over-all averages an analysis was made of the figures forwarded to the Department of Education by all of the school divisions in the province. Four unit costs (per day, per mile per bus, per pupil per day, per pupil per mile) were studied from all divisions in the province that operated at least fourteen school buses. An analysis revealed that the cost of operating publicly owned buses is consistently less than the cost of operating contract buses.

Of the five divisions studied in southern Alberta, two of them, St. Mary's and Foremost, have only privately owned buses. The other three, Taber, Macleod and Lethbridge, have both types of bus. The latter three have made considerable effort to set up a cost-accounting system which takes into consideration such factors as depreciation. Information from the files of Taber School Division show that the average cost per student mile for publicly owned buses was .006 dollars. The average cost per student mile for privately owned buses was .015 dollars.

A further comparison of costs was made between Macleod, where both types of ownership are in use, and Foremost, where all buses are privately owned. In Macleod the cost per pupil per mile for divisional buses was .009 dollars. For private buses it was .012 dollars. In Foremost the private buses cost .017 dollars. In many respects the two areas are comparable but in Foremost the cost was considerably higher.

A review of available literature indicates that it is important for school boards to set up their own bus garages or depots if the publicly owned bus is to be operated at less cost than the privately owned bus. And there must be supervision.

From the experience of the divisions in southern Alberta and from the figures of the Department of Education, it must be concluded that publicly owned buses are operated at less cost than are privately owned buses. This conclusion is in harmony with findings in the United States.

[9]Report of the Proceedings of the Annual Refresher Course in School Administration, 1948, p. 71.

Administration

No matter who owns school buses, the problem of administration is a growing one. Where numbers of pupils are transported, additional records are essential in the school division offices, increasing the work of the secretary-treasurer. There must be supervision of routes, a task now performed by the divisional trustees.

The administrative problems connected with private ownership have to do with finding somebody who will purchase the proper bus, making an agreement as to how much money he should be paid, and establishing other conditions of his contract. Often considerable time is spent each year finding new drivers or haggling with old drivers over their contracts. The admninistrative problems in the school office are not so great because all that is necessary is to make out a pay cheque once a month.

The administrative problems connected with public ownership have to do mostly with buying the buses and keeping them in operating condition under a competent driver. Considerable book work is necessary in the office if a publicly owned bus is to be properly accounted for.

Lambert comments as follows:

> On educational grounds and from the standpoint of flexibility in operation of the system, the case for district ownership is very clear. Where the amount of service is small or new systems are not very extensive, the contract method is often better. But for the large systems, and as a long-time policy, district ownership and management is the better method.
>
> Citizens and school administrators are coming to see that educational service together with economical use of public tax money is more important than contentment of local contractors or the convenience of school boards who wish to escape some of the problems incident to ownership and management of the transportation system.[10]

Probably the time will come in the Province of Alberta when the business of transporting students to school will be integrated under one transportation director in Edmonton, and the details of administration will be looked after by local transportation managers. This of course would radically change the present situation, in which trustees and secretaries are called upon to carry out many duties connected with publicly owned buses.

Trend in ownership

The Alberta Department of Education started publishing figures on publicly owned and privately owned buses in 1947. In the three years following, one-third of the buses added were publicly owned. More detailed figures, however, show a trend toward public ownership. In 1947 there were 697 buses in Alberta, twenty per cent of

10Lambert, **School Transportation**, p. 19.

them publicly owned. In 1950 there were 1,156 buses in Alberta, twenty-six per cent publicly owned.

If the cost figures used by Featherston[11] could be applied to Alberta, public ownership might save the province about half a million dollars annually.

Conclusions

To assist in answering the question "Should school buses be publicly owned?" the criteria of service, cost, administration, and trend have been applied to studies made in the United States and to data gathered in Alberta. Evidence from the United States is in almost complete support of the principle of jublic ownership. Most of the evidence in Alberta favors the same principle.

Recommendations

1. That all school boards keep an individual record of each bus, no matter who owns it, showing all items of cost.

2. That all divisions owning buses explore the possibility of setting up their own garages.

3. That school boards consider the advisability of purchasing some buses every year, and tend more and more toward public ownership.

4. That the Department of Education appoint a senior official as a director of school transportation.

5. That divisional boards employ a transportation manager to supervise the buses of one or more divisions.

BIBLIOGRAPHY

Alberta Department of Education. *Annual Reports,* 1947 ff. Edmonton, Queen's Printer.

Ambrose, Philip Spencer. *The Use of High School Students as School Bus Drivers.* Unpublished doctoral thesis, Columbia University, 1949.

Featherston, E. Glenn. *Public Versus Private Ownership of School Buses.* Washington, D.C., Office of Education, 1948.

Foulkes, J. G., and Beery, G. S. *A Study of Transportation of High School Pupils in Wisconsin.* Madison, Wis., Department of Public Instruction, 1938.

Fulmer, H. L. A. *A Statistical Study of School Transportation in South Carolina.* Columbia, S.C., State Department of Education, 1931.

[11]Featherston, **op. cit.**

Kenway, C. S. *Report on School Vans.* Edmonton, Highway Traffic Board, 1947.

Kenway, C. S. "Let's Talk About School Buses." *The Alberta School Trustee* XX: 4 (April, 1950).

Lambert, Asael C. *School Transportation.* Stanford University Press, 1938.

Meadows, Austin Ruel. *Safety and Economy in School Bus Transportation.* Wetumpka, Alabama, Wetumpka Printing Co., 1940.

Noble, M. C. S. Jr. *Pupil Transportation in the United States.* Scranton, Pa., International Textbook Co., 1940.

Reeder, Ward G. *The Administration of Pupil Transportation.* Columbus, Ohio, The Educator Press, 1939.

Operation of School Vans. Edmonton, Alberta, School Trustees' Association, 1948.

Report of the Proceedings of the Annual Refresher Course in School Administration. Edmonton, Alberta Division Secretary-Treasurers' Association, 1948.

Statistics on Pupil Transportation. Washington, D.C., Federal Security Agency, Office of Education, 1949-50.

School Transportation. Helena, Montana, Department of Public Instruction, 1950-51.

WHY TEACHING IS CHOSEN AS A CAREER

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In Alberta today, as in other provinces, there is a teacher shortage. To meet this shortage, selective recruitment has appeared necessary to authorities charged with the responsibility of staffing our schools.

Why do people choose teaching as a career? Upon our insight into this question depends, in large part, the success of the recruitment program. The Alberta Recruitment Committee has not been without information. Aikenhead's study helped to clarify the decisive factors influencing those who might have entered teaching but did not.[1] Recent questionnaire studies in the Faculty of Education elicited from students further information, both fact and opinion, about why they chose teaching.[2]

Since all teachers trained in Alberta receive their preparation at the University of Alberta, the Faculty of Education offers peculiar advantages in coming at the problem. The present investigation, then, continues and extends the questionnaire studies noted above.

Methods and Procedures

The questionnaire was originally developed through the cooperation of first-year classes who presented some seventy reasons for entering teaching. These were reduced to avoid repetiton. In 1952-53 the first questionnaire was tried out on all classes. After revision, the first-year classes again worked through the questionnaire in 1953-54. The final revised form was given to the 1954-55 classes, with 124 first-year Bachelor of Education and 352 Junior Elementary students participating.

The questionnaire was organized under the following headings:

1. General Information
2. Reasons for Choosing Teaching
3. Influences For and Against Your Choice
4. Sources of Information About Teaching

The test was administered so as to secure the most complete and reliable answers possible. It was given in the third week of attendance, and in class time. Students were told that the results would be used to help solve the teacher shortage and so provide educa-

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[1] J. D. Aikenhead, **To Teach or Not to Teach.**

[2] S. C. Clarke, "Why Young People Go In for Teaching," **The A.T.A. Magazine** 32:10; H. C. Melsness, "More Information, Please," **The Alberta School Trustee** XXIII:6.

tional services for more children. Except in one class, names were not required.

This exception was made in an effort to validate. It was explained to the class that any questionnaire is to some extent like a strait-jacket, and that each student would be interviewed in order to give him an opportunity to explain in detail the factors which caused him to chose teaching. It was emphasized that this was not a test of memory[3] of what they had checked on the questionnaire, but an effort to validate for the total group.

The results were tabulated, classified, and examined to see what influences appeared to appeal most frequently and most strongly to young people who had just entered their teacher training.

Findings

When do young people make up their mind to enter teaching?

Table I shows that 83 per cent of the students in the Bachelor of Education[4] program decided to enter teaching during or after Grade X, while the corresponding figure for the one-year Junior Elementary[5] program is 65.6.

TABLE I

GRADE WHEN TEACHING WAS CHOSEN

Program	Pre-School	1	2	3	4	5	6	7	8	9	10	11	12	After 12	Total
Jr. E.	12	14	6	9	8	10	11	7	15	29	37	37	79	78	352
B.Ed.	1	1	0	2	1	1	3	1	5	6	16	11	33	43	124

The home background of Junior Elementary students appears to make no appreciable difference in time of choice. Sixty-four per cent of students whose home was a farm chose teaching as a career during or after Grade X, while 66 per cent of those from towns and cities made their choice of teaching during or after Grade X.

In the interview validation it was found that 52 out of 61 interviewed made no change in the statement of when they decided to enter teaching. Five persons changed the time of decision by one grade, and four persons by two grades. The interviews demonstrated that these changes were in the nature of specifying whether the individual was "thinking about it and had an inclination for teaching," or had made a final decision.

[3]Q. McNemara, "Opinion-Attitude Methodology," **Psychological Bulletin** 43, p. 313.

[4]The Bachelor of Education course is a four-year degree program with certification at the end of the second, third or fourth year. See Faculty of Education Calendar, University of Alberta, 1954.

[5]The Junior Elementary course is a one-year teacher-training program leading to permanent certification after two years of successful experience.

Why do prospective teachers choose a particular program?

In the questionnaire, students were asked to write the reasons for their selection of the B.Ed. or Junior Elementary program. These reasons were then classified and tabulated as shown in Table II.

TABLE II

REASONS FOR CHOOSING A PARTICULAR PROGRAM

BACHELOR OF EDUCATION (124 Students)			JUNIOR ELEMENTARY (352 Students)		
Rank Order	Reason	Number	Rank Order	Reason	Number
1.	Adequacy of training	60	1.	Finances	252
2.	Finances	51	2.	Immediacy of a career	107
3.	Entrance to B.Ed. degree	22	3.	Vocational exploration	100
4.	Vocational Exploration	9	4.	Lack of educational background	85

Adequacy of training includes such statements as "I don't think one year is enough training", "I think the B.Ed. is a better program", "I wanted a good grounding in mathematics (science, house economics), etc.". *Finances*, for the B.Ed. group, includes "I could afford two years but not four", "I could get a bursary", "financial reasons" (not elaborated); for the Junior Elementary group, "funds not available for more than one year", "financial reasons", "eager to earn money as soon as possible". The Junior Elementary people placed emphasis upon the short course, with its one year of training. In both groups *vocational exploration* included such ideas as "to see if I would like teaching", "to discover whether or not I have the required ability".

The intervew valdation found that 41 out of the 61 interviewed had made an adequate written statement of reasons for choosing the program they did. Of the remainder, 18 added reasons during the interview which were not recorded on the questionnaire, without changing their recorded reasons. Two individuals gave wholly different reasons during the interview, indicating that the questionnaire answers were not valid.

What reasons do students give for choosing teaching as a career?

The questionnaire contained a list of eighteen statements which had been shown by three previous tryouts to include the most frequently chosen and most important reasons why students choose teaching. Each student checked the statements which indicated why he chose teaching. In additon, he placed his five most important reasons in rank order.

The first choice received a weight of five, the second a weight of four, and so on down to a weight of one for a fifth choice. The results of the frequency and importance of reasons for choosing teaching are presented in Table III.

TABLE III

REASONS FOR CHOOSING TEACHING

REASONS	B.ED.		JR. E.	
	No.	Wtg.	No.	Wtg.
1. I like working with children	114	394	315	1206
2. I thought teaching would bring me the greatest satisfaction and happiness	106	340	293	759
3. I wanted to serve society	98	211	246	523
4. I knew I was sure of a job teaching	71	108	223	330
5. I knew I could get a job after one or two years of training	47	46	235	246
6. Admiration for a very good teacher influenced me to take Education	48	67	163	246
7. For me, teaching was a stepping stone to another career	26	74	106	231
8. I liked the short working hours of teaching and holidays with pay	48	54	173	202
9. I was able to get a bursary for the Faculty of Education	31	50	160	169
10. Teachers advised me to take Education	34	33	149	156

The first three reasons given in Table III are in correct rank order of both frequency and importance for both B.Ed. and Junior Elementary. This finding is supported by previous studies[6] and appears to be a very stable expression of the viewpoint of young people who have already chosen teaching as a career. These indications have significance for both recruitment and training of teachers.

It is to be noted that, in general, the order in which the statements are presented is the rank order of frequency and importance.

The data in Table III support the conclusion that young people who choose teacher training generally have altruistic reasons. It is reassuring to note that purely selfish motives take a subordinate position, both in frequency of choice and in the weight given to them. Contrary to the opinions expressed by many persons interested in education, it appears from this table that the example set by teachers in the classrooms is still an effective means of influencing students to take teacher training.

[6]Supra, notes 1 and 2.

The validation interviews indicated that the total results of the 61 interviews maintained the same rank order of the first three reasons as presented in Table III. Beyond that point, the rank order by interview no longer agreed perfectly with the questionnaire results. This was to be expected from an examination of the sharp drop in weightings shown in Table III.

What are influences FOR and AGAINST choosing teaching?

The questionnaire listed eleven possible influences *for* and *against* the individual choosing teaching as a vocation. The students were instructed to check applicable factors and afterwards to select the *three* most important in rank order. These results were weighted 3 for the first choice, 2 for the second and 1 for the third. The results are presented in Table IV. The order of influences in this table is based upon the *for* weightings of the Junior Elementary group.

TABLE IV

INFLUENCES *FOR* AND *AGAINST* CHOOSING TEACHING

FOR				INFLUENCE	AGAINST			
B.Ed.		Jr. E.			B.Ed.		Jr. E.	
No.	Wtg.	No.	Wtg.		No.	Wtg.	No.	Wtg.
64	116	247	444	Mother	5	8	15	29
57	70	229	339	Father	7	14	12	17
60	83	193	223	A teacher	5	12	19	22
46	54	170	205	A principal	4	3	22	37
34	23	129	128	Several teachers	4	2	20	26
28	35	136	102	Community attitude to teaching	12	30	39	72
33	52	122	102	A friend	21	35	74	126
38	43	139	97	Relatives	9	17	38	53
39	32	101	67	Several friends	28	46	84	126
26	25	57	63	School counselor	5	6	4	4
7	3	24	14	Public reaction to six-week course	38	58	166	252

It is clear from Table IV that students who have already chosen teaching do not admit many influences against their choice. With the exception of the "school counselor" the table may be read from the bottom upwards for the approximate rank order of the "influences against". Since the table was arranged with a balance of opposites, the fact that rank order is substantially maintained by reading *down* for "influences for" and at the same time reading *up* for "influences against" demonstrates a considerable degree of internal consistency.

The "school counselor" differs from the other influences because this kind of service is not at present available on a province-wide basis.

In the validating procedure, the 61 students interviewed retained the top four influences presented in Table IV, but in this order: teacher, mother, father, principal. The interviews further confirmed "public reaction to the six-week course" as the least effective "influence for", followed by "school counselor", "community attitude to teaching", "relatives" and "several friends".

It would appear that while the questionnaire may have slightly distorted the rank order of influences, the results presented in Table IV are generally valid.

What influences a friend against entering teaching?

The questionnaire asked the students to list the influences which they thought had caused friends or acquaintances, who might have made good teachers, to decide against the profession. The tabulation and classification of these influences are presented in Table V.

TABLE V

INFLUENCES AGAINST A FRIEND ENTERING TEACHING

BACHELOR OF EDUCATION (124 Students)		JUNIOR ELEMENTARY (352 Students)	
Reason	Number	Reason	Number
1. Low salary	38	1. Low salary	112
2. Adverse public opinion	25	2. Adverse public opinion	53
3. Discouraged by friends, parents or teachers	28	3. Discouraged by friends, parents or teachers	43
4. Financial	8	4. Financial	39

In Table V the category of *low salary* includes such statements as "poor pay", "not enough money for a man", "better opportunities and wages in other fields". *Adverse public opinion* covers "teaching is a thankless job", "teachers are not appreciated", "the profession is losing prestige", criticism outside of the classroom is increasing", "education is looked down on", "standards are too low", "teachers are objects of ridicule" and similar statements. *Discouraged by friends, parents or teachers* includes the following: "friends talked him into doing something else", "parents disapproved of his taking teaching", "he witnessed the failure of some teacher". The *financial* category indicates ideas like "not enough money to take the course", "he had to work right away to earn money".

Interviews with the 61 students produced validation similar to that following Table II.

How valuable are available sources of information?

The recruitment of teachers depends to a considerable extent upon the possibilities of bringing the career of teaching to the attention of high-school students. The following data indicate the nature and effectiveness of various sources of information about teaching.

TABLE VI

NATURE AND EFFECTIVENESS OF SOURCES OF INFORMATION ABOUT TEACHING

BACHELOR OF ED.						JUNIOR ELEMENTARY				
Not Available	Very Valuable	Helpful	Little Use	Useless		Not Available	Very Valuable	Helpful	Little Use	Useless
7	26	46	22	6	Principal	16	126	140	43	16
4	33	49	11	4	Teachers	9	102	171	38	10
41	19	20	12	5	Counselors	157	45	54	19	23
36	9	28	14	4	Career Nights	135	45	75	27	22
45	9	22	10	3	"A Career in Teaching"	138	57	74	19	9
10	21	48	14	4	"Information for Prospective University Students"	40	112	146	22	6
2	50	47	7	3	Faculty of Ed. Calendar	17	142	168	15	4
23	11	34	19	3	General University Calendar	101	36	106	37	12

Certain of the "sources" in Table VI need clarification. *Career nights* feature job descriptions by successful persons in various fields. "A Career in Teaching" is a pamphlet published by the Alberta Department of Education to inform students about the job specifications of teaching. "Information for Prospective University Students" is published by the University of Alberta's Student Advisory Services.

It may seem peculiar that principals or teachers were not available to inform their students about careers, but this may be explained by the fact that certain students were taught in one-room schools, took courses by correspondence, or had been out of school for some years.

Conclusions and Implications

1. Since approximately one-third of those who choose teaching make the decision before the Grade XII year, it is important that any program of selective recruiting begin prior to this time. It is indicated also that the main emphasis on recruiting should be given during and after the Grade XII year.
2. The choice of a short-term teacher-training program is based upon financial reasons and the immediacy of a career. Students did not choose this training because they thought that it was adequate. It is therefore obvious that appeals to enter short

programs should not be based upon the merit of these as sound preparation for teaching.

3. The most frequent and important reasons for choosing teaching are idealistic ones. Candidates who are well qualified both personally and scholastically should be approached on the basis of service to society and the opportunity to serve the future generation.
4. Parents are the most important influences in causing young people to choose teaching. This implies that information about teaching as a career must get into the homes. Parents must be informed. As a corollary, adverse public opinion, since it affects parents, will tend to reduce the number of teacher candidates.
5. The effect of teachers upon the decisions of students to enter the profession is strong. Classroom clmate has much to do with a student's views about teaching. The example of a good teacher is often the determining factor in the choice of teaching as a career. The active cooperation and support of the teacher's professional organization should promote selective recruitment.
6. The chief influence against choosing teaching as a career is adverse public opinion. Young people who have chosen teaching feel keenly the criticism and lack of esteem from which education currently suffers. It is therefore essential that critics of education use good judgment in attempting to point out its faults lest in so doing they worsen the conditions which they deplore by driving capable prospective candidates away from teaching.
7. In discussing a friend who might have entered teaching and did not, low salary is given as the most frequent reason. It appears that any long-range solution of the teacher shortage is dependent upon increased salaries. Teachers' salaries must be made comparable with returns from competing opportunities which are available to capable young people.
8. Financial difficulties are given as the most frequent reason for choosing short-term teacher-training programs. A substantial number of young people name a bursary as a reason for choosing teaching. It is clear that the measures taken by the Alberta Government in the remission of fees and the provision of bursaries have contributed materially to the alleviation of the teacher shortage in the province.
9. Prospective teachers cited principals, teachers and the Faculty of Education Calendar as the most useful sources of information about teacher training and opportunities. This suggests that, heretofore, other sources of information such as teaching pamphlets, career nights and the like have not have had suffi-

cient effect, partly because the whole of the province's high school population has not been reached adequately. Not all students are able to obtain easily the required information about a career in teaching. Efforts to inform students about teaching must not only be continued but increased to provide province-wide coverage.

BIBLIOGRAPHY

Aikenhead, J. D. *To Teach or Not to Teach.* Ed.D. Dissertation, University of Oregon, 1954.

Clarke, S. C. T. "Why Young People Go In for Teaching." *The A.T.A. Magazine* 32:10 (June, 1952), pp. 10-12.

McNemara, Q. "Opinion-Attitude Methodology." *Psychological Bulletin* 43:4 (July, 1946), pp. 289-374.

Melsness, H. C. "More Information, Please." *The Alberta School Trustee* XXIII:6 (May, 1953), pp. 8-9.

THE READING ABILITIES OF ADULTS

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While there has been fairly continuous investigation of reading efficiency in the Alberta public schools, little or no detailed information has been gathered on the reading of adults. The kind of reading adults do must result, in part, from previous training. Studies in this field should therefore yield some information, at least, about the effectiveness of the teaching of reading. Further, the success of certain remedial methods with adults might suggest possible procedures for the use of high schools and universities with those students who, because of ineffective reading habits, are unable to achieve at a maximum level of competency.

Courses in effective study habits were first started by the author in 1946, for graduate and student nurses in Manitoba. The Extension Department of the University of Alberta provided an opportunity to continue this work. Training in silent reading skills has been given to more than 200 adults during the past two years in Calgary and Edmonton. The data on one of these groups, sufficiency complete for statistical analysis, provide the basis for the present study.

The purpose of the study was to determine:

1. Reasons for taking a course in reading
2. Reading ability
3. Effects of short-term remedial training

Participants

Sixty-four adults registered for the course. Meetings one and a half hours in length were held once a week for ten weeks. The average attendance of 56 was unusually high for a voluntary, non-credit night course, especially with people who had already put in a day's work and who in most cases had many home and community ties. Absences were usually due to business trips, illness, or previous obligations.

With the exception of one 18-year-old student, the age of the group ranged from 30 to 60 years. Twenty-eight per cent were women. The majority of the class were employed in business as owners, managers, chartered accountants, secretaries and stenographers, or in oil companies as engineers, seismologists, geologists, landsmen and oil scouts. Eight per cent were nursing instructors. Five per cent were R.C.A.F. and T.C.A. personnel. The remainder included two housewives, one doctor, a lawyer and a telephone man.

Almost half of the group were university graduates: ten per cent had two degrees, and 36 per cent had one degree. Twenty per cent were Bachelors of Science. Of the others, 25 per cent had senior and eight per cent junior matriculation.

Reasons for Taking the Course

The most frequently expressed reason for needing help in reading was slow rate and poor comprehension. Business men found it difficult to cover any great amount of material, while engineers found that the slow reading required for detailed reports and graphs had become a habit. Some had trouble in retaining the detail of what they did read. Eighteen per cent felt that more efficient reading skills would lead to promotions and general self-development. Others wanted help in reading reports and research, in critical analysis, and in reviewing books. Still others attended the course to find how it was organized, to asses its value in student training, or to help their own children.

None of those who attended the classes could be considered incompetent at the adult level, or seriously deficient in the basic skills of reading. But their skills were inflexible. They tended to read all material at the same rate—whether reports, fiction, or other. They had little idea that to read comprehensively means to read for purpose, organization of ideas, and critical analysis.

Materials

Because daily work exercises are considered essential for reading improvement, *How to Become a Better Reader* (Paul Witty) and *The Atlantic Monthly* (education edition) were assigned as homework. From time to time the rate, comprehension and vocabulary graphs for the exercises in *How to Read Better and Faster* were discussed with individuals before or after sessions.

To encourage idea rather than word reading, members were asked to read at least three mystery stories, westerns, or light fiction within a time limit. Lists of reference books on the art of reading, vocabulary development, and semantics were made available through the University Extension Library.

During the course mimeographed materials on current topics were used for discussion and critical analysis. Every effort was made to suggest books and magazines which would lead to socially useful information on such subjects as politics, important literature, controversial issues, music, and humor, or lead to more thoughtful reading in varied fields. A Harvard film[1] and transfer sheet fol-

[1]Harvard Reading Films, obtained from the Audio-Visual Aids Branch of the Department of Education, Edmonton.

lowed by comprehension checks were used to speed the rate by exposing segments of a line at increasingly brief intervals.

A Keystone tachistoscope[2] was used to improve the rate of visual perception. This instrument flashes forms and digits at short intervals. It is most effective for demonstrating that the ability to see and remember an increasing number of symbols at a glance improves with training, and therefore gives more understanding of the possibilities of training in other areas of reading. As word, phrase and sentence slides were not available, tachistoscopic training was done with digits.

The objective tests—Nelson-Denny Reading Test (two forms) and Michigan Speed of Reading (two forms)—were similar to those of a New York study[3] of adult reading. They could be administered in a single class period, and were easy to mark. As rate and comprehension tests seldom appear to measure the same thing,[4] it seemed practical to spend as little time as possible on the objective tests, and to use them primarily for motivation and as a measure of progress.

The Michigan Vocabulary Profile Test was used to discover weaknesses and strengths in the specialized vocabulary areas.

Research has shown that auditory memory span more than auditory discrimination may be a significant factor in the development of word recognition[5] and that visual memory span, with training, usually results in measurable improvement in reading speed. Because of this, a measure of auditory and visual memory span was made—auditory by dictating increasing numbers of digits, and visual by flashing increasing numbers of digits at one-hundredth of a second.

Remedial Procedure

For many reasons peculiar to voluntary night classes a course of this kind requires different procedures from those regularly used. To prevent loss of time, interest must be caught and definite goals and work patterns established immediately. In large classes, abilities and interests differ broadly. Where there has been only a general diagnosis, the instructor must keep a continual watch for signs of strain and special difficulties. The effectiveness of this short-term training depends on changing attitudes towards the reading task itself. and in consistent practice in the class period and at home.

[2]Loaned by the Alberta Society of Optometrists.

[3]Carol S. Bellows and Carl H. Rush, Jr., "Reading Abilities of Business Executives," **Journal of Applied Psychology** XXXVI:I, p. 2.

[4]Lawrence W. Carrillo and William D. Sheldon, "The Flexibility of Reading Rate," **Journal of Educational Psychology** XLIII, pp. 299-305.

[5]Dorothy L. Poling, "Auditory Deficiencies of Poor Readers," **Clinical Studies in Reading II, p. 11.**

For similar reasons the remedial work has to be general. The course objectives were to increase reading efficiency by means of high motivation and methods which would modify the reading habits usually established in the word-learning stages of the primary grades.[6]

Each period was planned to include visual training, work with a Harvard Film and Transfer sheet, and discussion of such topics as vocabulary, memory, or critical thinking. The first and ninth meetings were used for testing, the tenth for interpretation.

Results and Interpretations

TABLE I

COMPARISON OF READING PERFORMANCES (RAW SCORES) OF FIRST AND NINTH CLASS MEETING

TEST	Before Training (1st Meeting)			After Training (9th Meeting)		Correlation (1st & 9th)	
	N	Mean	S.D.	Mean	S.D.	r	Critical Ratio
Michigan Speed of Reading Test (Forms 1 and 2)	45	53.0	10.2	59.5	10.1	.82	3.72†
Nelson-Denny Vocabulary Test (Forms A and B)	44	61.0	18.2	62.9	18.3	.91	1.60
Nelson-Denny Paragraph Reading Test (Forms A and B))	44	46.6	14.8	48.2	14.5	.83	1.2
Nelson-Denny Total (Forms A and B)	44	107.9	30.4	112.0	30.4	.91	2.07*
Harvard Film Transfer Reading rate (words per minute)	43	180.4	40.1	370.1	107.5	.51	13.3†
Harvard Film Transfer Comprehension	43	50.2	17.7	34.3	19.0	.28	4.68†
Auditory Digit Span of Recognition	41	7.0	1.5	7.4	1.2	.58	.47
Visual Digit Span of Recognition (tachistocopic training)	41	3.9	1.1	4.8	1.1	.28	.20

*Significant at the 5% level.

†Significant at the 1% level.

Table I shows a comparison between the before and after scores on the tests used for reading measurement. The Michigan Speed of Reading Test and the Harvard Film Transfer for reading rate and comprehension showed significant changes at the one per cent level of confidence. The total Nelson-Denny Test score was significant at the five per cent level. The result was comparable to that of

[6]Christian O. Weber, "Reading Inadequacy As A Habit," **Journal of Educational Psychology** XL, pp. 427-433.

the New York Study[7] in the general pattern but not in the amount of improvement.

G. T. Buswell's statement that comprehension and vocabulary changes are difficult to achieve with adults[8] is true for this study. In the standardized Nelson-Denny Total Score, a general comprehension test, there was a significant gain (probably resulting from the very significant increase of rate) at the five per cent level of confidence. The daily work graphs showed a steadily rising rate line with a fairly high comprehension line. Comprehension, however, never increased as much as rate, and the Nelson-Denny Vocabulary Test scores showed no significant change. Other teaching methods might have produced better results.

The great increase in the standard deviation on the Harvard Film Transfer Reading Rate may be attributed to the physical and emotional after-effects of the mechanically controlled phrasing and pacing of the reading film shown before the Transfer Sheet, and to the visual fatigue produced in older participants by the sharp dark-to-light changes. The great increase in rate with a consequent loss in comprehension on the transfer sheet may also have been due to this reaction from the film. On the other hand, it could have been that those who found the films disturbing needed more help in word recognition and meaning before they were ready for intensive training in speed. The steady pressure of the film pacing appeared to have broken the habit of word reading, at least; and it could be expected that continued practice would raise the general level of comprehension. This expectation might be justified by the Nelson-Denny Total score (showing more than a chance gain), and by the consistently high level of comprehension in the homework graphs.

Auditory digit span was checked at the time of the first and the ninth tests. No remedial work was given because a digit span of seven is better than the average of between five and six digits established by the American Telephone and Telegraph Company, who use that span to set the length of telephone call numbers. Visual memory span increased from 3.9 to 4.5 digits, or 23 per cent. This is comparable to the results of a Bradley University study,[9] which showed a 29 per cent gain six weeks after training was completed. No doubt better lighting and a smaller group, as well as a better knowledge of the individual's visual difficulties from a complete visual examination, might have resulted in greater gains.

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[7]Bellows and Rush, **op. cit.**, p. 2.

[8]G. T. Buswell, "Remedial Reading at the Adult Level," **News, National Association for Remedial Teaching** II:2, p. 4.

[9]J. A. Potter and others, "Adult Reading Skill Program," **The Optometric Weekly** XLIV:5, p. 169.

TABLE II

PERCENTILE EQUIVALENTS FOR MEAN SCORES ON READING BEFORE AND AFTER TRAINING*

TEST	PERCENTILE BEFORE	PERCENTILE AFTER
Michigan Speed of Reading	30	60
Nelson-Denny Vocabulary	75	77
Nelson-Denny Paragraph Reading	55	60
Nelson-Denny Total	68	75

*Compared with college seniors.

For easy interpretation of test results, the class means (raw scores) were converted into percentile equivalents as shown in Table II. In the absence of any adult norms, college senior norms were used for comparison.

Table III shows the specialized vocabulary pattern to be in the lower percentile range according to test norms. That the vocabulary for physical sciences was high and for commerce low might be attributed to the backgrounds of the participants: 20 per cent of the degree group had science degrees, while of those in commerce or business only eight per cent had actual business training. Another possibility is that the vocabulary of the physical sciences is in more general use or that it receives better teaching in the schools, while commercial terms are seldom used in or out of schools except in a few business magazines and papers.

TABLE III

MEAN SCORES AND PERCENTILE EQUIVALENTS OF THE MICHIGAN PROFILE VOCABULARY TEST*

N = 49	MEAN (Raw Scores)	PERCENTILE
1. Human Relations	19	23
2. Commerce	17.6	7
3. Government	18.9	23
4. Physical Sciences	16.1	69
5. Biological Sciences	19	24
6. Mathematics	19	24
7. Fine Arts	15.8	23
8. Sports	20.1	31
TOTAL SCORE	145.5	27

*Compared with college seniors.

Summary and Conclusions

Courses in reading improvement have been conducted for groups of adults under the Extension Department of the University of Alberta. From the analysis of the present group it can be concluded that:

1. Adults have problems in speed and flexibility of reading, in vocabulary, in critical analysis, and in reading purpose.
2. The teaching methods described above were effective in developing rate and comprehension, but less effective in developing vocabulary.
3. Training in visual perception provides effective motivation for developing rate and comprehension.
4. The Harvard films appear to cause enough physical and emotional strain with large groups of adults to influence comprehension.
5. Homogenous grouping should make it possible to use better materials, give special attention to those who need help in the mechanics of reading, open more discussion on literature and politics for those with adequate backgrounds, and give university students more specific help in developing effective study habits.
6. Interested adults received enough information and direction to use the course techniques for two training classes of student nurses, and to interest three business offices in vocabulary development for their employees.

Collected comments on the course as a whole were sufficiently encouraging to warrant a continuance of the program. It would appear to have helped those who did read and comprehend well to develop more flexible reading habits and broaden their reading. There was some suggestion that training in phonetic and structural analysis before working on meaning would have been profitable to at least a third of the group. In some cases the adults claimed that although their reading speed had not increased they were able, by applying other suggested techniques, to improve the efficiency of reading necessary for their work.

Implications

For the Schools

The teaching of reading above the primary grades should place more emphasis on developing a flexible rate of reading for different purposes, and on vocabulary development in all areas but that of the physical sciences.

AUGUSTANA UNIVERSITY COLLEGE
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For the University

A short-term course on effective study habits for students could have some effect on university achievement, and be used to follow up the diagnosis of student counselling services. In such a course, stress should be placed on vocabulary, organization, and critical analysis.

For Further Research

1. Development of more effective techniques for improving word recognition and vocabulary at high school and adult levels.
2. A comparative study of the effectiveness of direct and indirect methods of vocabulary teaching.
3. A study of the nature and extent of the relationship between auditory and visual memory span and reading achievement.
4. A careful analysis of science courses to identify the additional requirements which would insure training in the reading skills needed for professional success.

BIBLIOGRAPHY

Bellows, Carol S., and Rush, Carl H. Jr. "Reading Abilities of Business Executives." *Journal of Applied Psychology* XXXVI:1 (February, 1953), pp. 1-4.

Buswell, G. T. "Remedial Reading at the Adult Level," *News, National Association for Remedial Teaching* II:2 (March, 1952), pp. 1-4.

Carrillo, Lawrence W., and Sheldon, William D. "The Flexibility of Reading Rate." *Journal of Educational Psychology* XLIII:5 (May, 1952), pp. 299-305.

Harvard Reading Film, Harvard University Press, Cambridge, 1948.

Poling, Dorothy L. "Auditory Deficiencies of Poor Readers." *Clinical Studies in Reading II*, Supplementary Educational Monographs No. 77. University of Chicago Press, 1953.

Potter, J. A., and others. "Adult Reading Skill Program." *Optometric Weekly* XLIV:5 (January, 1953).

Weber, Christian O. "Reading Inadequacy as Habit." *Journal of Educational Psychology* XL:7 (November, 1949), pp. 427-433.

Books

Good, Carter V., and Scates, Douglas E. *Methods of Research.* New York, Appleton-Century-Crofts, 1954. 920 pp.

This volume is designed to meet the needs of graduate research workers in education, sociology and psychology. Since it is the most comprehensive treatment of the general or non-statistical approach to research in the social sciences to appear in the last decade, its welcome seems assured.

Three introductory chapters deal successively with the place of research in modern society, the formulation and development of the research problem, and the survey of related literature. The inclusion of examples and illustrations drawn from the authors' wide experience in research adds materially to the effectiveness of the treatment.

The next ten chapters are devoted to an exposition of research methodology. Readers will be grateful to the authors for their simple and logical classification of procedures. The historical method, including the philosophic and bibliographic methods of former classifications, receives effective treatment in one chapter. Six chapters are devoted to the descriptive method, dealing mainly with problems of classification and analysis and the procedures utilized in surveys and normative research. This section seems unnecessarily long.

A further chapter deals briefly with the experimental method, without reference to the complexities of statistical design. At first glance the brevity of treatment suggests a danger of leading the inexperienced student to underestimate the importance of this vital aspect of the research worker's training. In this day of increasing emphasis upon broad statistical training there is little likelihood of this happening. In addition, the succession of excellent books on research design and statistical inference, which have been published since 1945, render further treatment at this time quite unnecessary.

The case-study and clinical methods receive adequate treatment. Again, the authors are to be commended for their restraint in dealing with clinical procedures. As in the case of the experimental method, more detailed treatment is rendered unnecessary by the existence of thorough, comprehensive and modern references on this subject. A discussion of the genetic, developmental and growth study procedures concludes the exposition of methodology in research.

The book concludes with a detailed and valuable treatment of the skills and procedures involved in the gathering and organization

of research data, and the writing of the research report. Students engaged in preparation of a dissertation will find ready use for this information.

This volume would seem to have four claims to favorable consideration. First, its classification of research methodology into five logical categories seems to provide an escape from a situation which has threatened to become a taxonomic headache. Second, the wealth of examples and illustrations drawn from research problems in the physical and social sciences brings theory down to practice in commendable fashion. Third, the chapters on the survey of related literature and on the reporting of research are invaluable aids to the beginner. Fourth, the extensive chapter bibliographies will prove of great utility to the student of research.

The volume have one major weakness. It is too long. For example, the authors require six chapters, four hundred and thirty-three pages, to deal with the descriptive method. This lengthy treatment is not attributable to the reproduction of extensive figures or tables, the inclusion of typical studies, or even of extensive bibliographies. All of these are present and are of definite value. Rather it is a fondness for theoretical exposition which lengthens and somewhat lessens the value of this otherwise excellent book.

G.M.D.

Editorial

Volume I, Number 1 of *The Alberta Journal of Educational Research* carried in this column a guest editorial by the President of the University of Alberta, together with greetings from the various organizations cooperating in the Advisory Committee on Educational Research. These inclusions were appropriate to the initial issue. The President has been continuously helpful to the Committee. The University's Board of Governors, the Alberta Department of Education, the Alberta Teachers' Association, the Alberta School Trustees' Association and the Alberta Federation of Home and School Associations have provided vital support, both moral and financial.

In the present issue it seems fitting that the editorial column should be concerned with the research program itself. Areas of research need classification. Relationships between current investigations need pointing up.

A central area of educational research is, of course, curriculum and pupil achievement. A 1953 study of reading and language in Alberta schools was the basis of the Carmichael-Rees article, "A Survey of Reading Achievement in Alberta Schools," in the first issue of the Journal. It is also the basis of two articles in the present issue: "A survey of the Language Achievement of Alberta School Children" (Reid-Conquest), and "A Study of the Written Composition of a Representative Sample of Alberta Grade Four and Grade Seven Pupils" (Coutts-Baker). The composition scale which appears as an appendix to this issue was derived from the latter study.

Attention to a more general kind of relationship between the curriculum and students is illustrated by Hohol's "Factors associated with School Drop-Outs," in the first issue. Articles on promotion policies and individual differences among students will appear in subsequent issuses.

Another extremely important area of research, teacher education, was introduced in the first issue by Clarke and Pilkington, "Why Teaching is Chosen as a Career."

Other articles in the first two issues suggest still other kinds of research the findings of which will be presented from time to time. Ooley's "A Cooperative Staff Project to Improve Reading" describes the kind of investigation currently known as "action" research. Kimmit's "Comparative Study of Public and Private Ownership of School Buses in Alberta" directs attention to one of the more purely administrative phases of school operation. Lampard's "The Reading

Abilities of Adults" opens up the field of extension services and adult education. Sister Hochstein's "Roman Catholic Separate and Public Schools in Alberta" is an historical study.

The above articles suggest the scope, if not the detail, of the program with which the research committee will be concerned.

The first year of the program must of course be exploratory. The Committee is experimenting not only with areas and types of investigation but also with the development of research interests and competencies, with the means of reporting, and even with such elementary matters as the format and binding of the Journal. Mistakes have been made, and there will no doubt be more of them. But the Committee is confident that with the continued support and understanding of persons and institutions sensitive to the values of research, it will be able to develop an increasingly significant program and an increasingly effective organ of publication.

A STUDY OF THE WRITTEN COMPOSITION OF A REPRESENTATIVE SAMPLE OF ALBERTA GRADE FOUR AND GRADE SEVEN PUPILS

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Background and Purpose of the Study

The present study is supplementary to a large survey of the reading and language achievement of grade IV and grade VII students in Alberta.[1] For this survey, a representative sample of students was chosen in such a way that all geographic areas, types of school organization, socio-economic and ethnic groups would be included. The city sample was drawn from Edmonton and Lethbridge, the town sample from eight towns (school population 250-1,000) randomly chosen. The graded rural sample included only rural pupils attending graded schools, the ungraded sample only rural pupils attending one-room rural schools. Slightly less than 1,000 pupils were included in each of the grade IV and grade VII samples.

The general purpose of the present study was to examine, evaluate and analyze the written composition of Alberta boys and girls at the grade IV and grade VII levels. More specific purposes were:

1. The compare achievement at these levels—both as to the quality and expression of ideas, and the correctness of mechanics and usage—among the various subsamples.
2. To explore correlations between each pair of the following variables for which data were available: intelligence, rating of the quality of ideas of an original composition, rating of correctness in mechanics and usage, and the total score on the California Language Test.

Design and Procedure

Assignment

The writers believed that, if the results were to be valid, all students at each level should be asked to write on a common topic of sufficient breadth that pupils of varied backgrounds could react to it. They further believed that it should be planned to stimulate boys and girls to marshal ideas from their own experience, to organize these ideas thoughtfully, and to write a short composition in as clear and effective a manner as possible. Actual assignments were as follows:

[1]For further information concerning this survey, see "A survey of Reading Achievement in Alberta schools" in the March 1955 issue of this Journal. See also, in the present issue, the editorial page and "A Survey of the Language Achievement of Alberta School Children," pp. 39-52.

GRADE IV

Joe can hardly wait to get home after school. He's building a model airplane, and in a couple of days he'll have it ready to fly. Bill heads for the playground, where he finds several friends eager to play ball with him. Sue goes straight home to read, while Mary and Ellen get out on their roller skates as fast as they can.

What do you like to do after four o'clock, when school is over for the day? Tell about it in one or more paragraphs. Use the title *Fun After Four.* Things you might mention are why you like it, how you do it, and any other interesting facts about it.

Arange your ideas and sentences as smoothly as you can, planning and trying them out on page 2, for *rough work.* Then rewrite them on page 3, for *finished work.* You needn't fill all the lines, although you should tell enough to be interesting.

Use pencil for all your work.

GRADE VII

Everyone has a hobby. Some boys and girls raise stock or grain for show. Some boys prefer building models, radio sets, or machines. Girls often like to embroider, to sew, or to do leather work. Some boys and girls collect things: stamps, coins, pictures, recordings. Others prefer to paint, to play the piano. No matter what your hobby is, you must have very good reasons for liking it. Write a composition of 150-200 words under the title *Why My Hobby is Important.* You may arrange your composition in one or more paragraphs depending upon how you want to organize your ideas.

Suggested Procedure

1. Write down the ideas you want to include.
2. Make a brief outline or plan of your composition.
3. Write your composition in rough form in the space provided.
4. Check your composition, making additions and alterations for improvement and correcting spelling, grammar, punctuation, and sentence form if necessary.
5. Copy your composition carefully in ink beneath the words *FOR FINISHED WORK.*

Evaluation and Scoring

Quality. The writers were aware of the existence of the *Hudelson English Composition Scale* and of other such scales. None seemed suitable for use in Alberta under the conditions of the present study. It was therefore decided to develop a scale specifically for the assignments made to Alberta grade IV and grade VII students, and based on the compositions written through the stimulus of the assignments.

Scoring instruction were as follows:

Evaluate the papers on a five-point scale using the following criteria for guidance. Enter the value in the space provided on the record card under the heading *Ideas, Organization, Presenation.*

Value 5: The qualities suggested for 4 plus such added qualities as the happy turn of phrase, added polish, greater maturity of thought.

Value 4: Selection of Ideas.
Unity of Ideas—stays with the topic.
Paragraphing—paragraphs used when necessary.
Use of Connectives—connectives used when necessary.
Sentence organization—sentences logically organized.

Sentence Variety—reasonable variety in sentence sturcutre to give a pleasing effect.
Style—pleasing and unpretentious style.
Appearance—agreeable as to appearance.

Value 3: The same qualities as in 4 above, but only average in effectiveness. Will include papers otherwise well written but not on the topic assigned.

Value 2: Lacking in most of the qualities as in 4 above, but intelligible.

Value 1: Generally lacking in the qualities of 4 above. Is incoherent, garbled, illogical, immature, obscure.

For papers graded 4 and 5 check under "Reasons for Evaluation" the specific points of strength which led to the evaluation placed on the paper.
For papers graded 1 and 2 check under "Reasons for Evaluation" those items in which the paper was so deficient as to merit the evaluation which you gave it.
For papers graded 3 no checks under "Reasons for Evaluation" are necessary.

Forty to fifty compositions from each of the grade IV and grade VII samples were submitted to a panel of experienced judges who evaluated them independently. When there was complete agreement by all of the judges, two scales[2]—one for grade IV and one for grade VII—were prepared and mimeographed.

Using these scales, selected students registered in the Faculty of Education, University of Alberta, evaluated the quality of the compositions in both the grade IV and grade VII samples. Each paper was evaluated independently by three students, and the average evaluation (rounded to the nearest whole number) calculated. The score values thus determined were used in making the analyses and comparisons of the quality of the compositions in the study.

Mechanics and usage. Each composition was scored according to the following instructions:

In the left hand margin of the student's paper place the letter *S* for each error in spelling, the letter *P* for each error in punctuation, and the letter *U* for each error in grammar and usage. Total the spelling, punctuation, and grammar and usage errors, and place the totals in the boxes on the record card. In the box to the right of these enter the value on usage and convention by using the following conversion scale:

Value 5—no errors
Value 4—1, 2 or 3 errors
Value 3—4, 5 or 6 errors
Value 2—7, 8 or 9 errors
Value 1—more than 9 errors.

Accept any legitimate spelling of a word. Count as an error in spelling the omission of the capital from proper nouns but not the omission of the capital at the beginning of the sentence. Count also as errors the capitalization of a word which does not require such capitalization.
Only those punctuation errors should be counted which are definite breaches or which distort the meaning. Count as errors in punctuation the omission of a capital at the beginning of a sentence. Do not count as punctuation errors the comma splice since this is really related to sentence organization rather than punctuation.

[2]These scales are reproduced in the Appendix to this Journal, pages 53-61.

Count as errors in grammar and usage only those items which are unacceptable in standard informal English. Use Perrin's *Writer's Guide and Index to English* and either Webster's *Collegiate Dictionary* or the *American College Dictionary* as sources against which to check usage.

In addition a count was made of the spelling, punctuation, and usage errors on all of the papers in both the grade IV and the grade VII samples.

Correlations

The intelligence score, the total score on the California Language Test, the *quality* score, and the *mechanics* score were recorded for each student. These data were then complied and analyzed, the statistical computations being done by graduate students under the guidance of Dr. G. M. Dunlop.

Written Expression in Grade Four

Quality

Table I shows the distribution of quality scores for all pupils in the grade IV sample. Of this sample 3.8 per cent (34 students) received a score of five, 24.3 per cent a score of four, 46.4 per cent a score of three, 22.2 per cent a score of two, and 3.3 per cent a score of one. The highest mean score was obtained by the city subsample. The town, graded rural, and ungraded rural subsamples follow in that order.

TABLE I

QUALITY SCORES, MEANS, AND STANDARD DEVIATIONS FOR FOUR SUBSAMPLES OF ALBERTA GRADE FOUR PUPILS

Sample	Scores					Number of Students	Mean	Standard Deviation	Standard Error
	5	4	3	2	1				
City	19	88	152	63	6	328	3.167	0.828	0.046
Town	7	62	92	35	5	201	3.154	0.835	0.059
Graded Rural	3	37	89	50	7	186	2.887	0.819	0.060
Ungraded Rural	5	79	29	49	11	173	2.815	0.887	0.067
TOTAL	34	216	412	197	29	888	3.033	0.865	0.029

The means shown in Table I were variously paired and their significance tested by the Cochran and Cox approximate method. Table II shows these differences, together with the standard errors of the differences between pairs, the observed t values, and significant differences between pairs.

TABLE II

COMPARATIVE ACHIEVEMENT IN QUALITY OF WRITTEN COMPOSITION OF GRADE FOUR PUPILS EXPRESSED AS MEAN DIFFERENCES

Sample	Town	Graded Rural	Ungraded Rural	Total Sample
CITY				
Dif.	0.013	0.280	0.352	0.134
SE_D	0.075	0.076	0.082	0.054
t	0.174	3.702	4.309	2.407
Sig.	.....	.01	.01	.05
TOWN				
Dif.	.....	0.267	0.339	0.121
SE_D	.....	0.089	0.090	0.066
t	.....	3.166	3.776	1.839
Sig.	.....	.01	.01	.....
GRADED RURAL				
Dif.	.....	.....	0.072	—0.146
SE_D	.....	.....	0.091	0.067
t	.....	.....	0.795	2.184
Sig.	.....	.....	.....	.05
UNGRADED RURAL				
Dif.	.....	.....	.....	—0.218
SE_D	.....	.....	.....	0.074
t	.....	.....	.....	2.962
Sig.	.....	.....	.....	.01

The means of the city and town subsamples are significantly greater than those of the graded rural and ungraded rural subsamples at the .01 level. Other differences between pairs are not statistically significant.

The above indications may be confirmed by reference to the mean of the total sample, which is significantly smaller than that of the city subsample and significantly greater than the means of both graded rural and ungraded rural subsamples.

Mechanics and Usage

Table III shows the distribution of scores in mechanics and usage for all pupils in the grade IV sample. Of this sample 6.1 per cent (54 students) received a score of five, 37.6 per cent a score of four, 33.9 per cent a score of three, 13.9 per cent a score of two, and 8.5 per cent a score of one. The highest mean score in mechanics was shared by the city and town subsamples. The graded rural and ungraded rural subsamples follow in that order.

TABLE III

MECHANICS SCORES, MEANS, AND STANDARD DEVIATIONS FOR FOUR SUBSAMPLES OF ALBERTA GRADE FOUR PUPILS

Sample	Scores					Number of Students	Mean	Standard Deviation	Standard Error
	5	4	3	2	1				
City	18	134	111	45	20	328	3.259	0.990	0.054
Town	18	75	65	27	16	201	3.259	1.057	0.075
Graded Rural	12	76	58	28	12	186	3.258	1.004	0.074
Ungraded Rural	6	49	67	24	27	173	2.902	1.084	0.082
TOTAL	54	334	301	124	75	888	3.189	1.030	0.034

TABLE IV

COMPARATIVE ACHIEVEMENT IN MECHANICS AND USAGE OF GRADE IV PUPILS EXPRESSED AS MEAN DIFFERENCES

Sample	Town	Graded Rural	Ungraded Rural	Total Sample
CITY				
Dif.	0.000	0.001	0.357	—0.070
SE_D	0.093	0.092	0.099	0.065
t	0.000	0.010	3.600	1.081
Sig.	.....	.....	.01	.....
TOWN				
Dif.	.....	0.001	0.357	0.070
SE_D	.....	0.105	0.111	0.082
t	.....	0.101	3.205	0.850
Sig.	.....	.....	.01	.....
GRADED RURAL				
Dif.	.....	.....	0.356	0.069
SE_D	.....	.....	0.111	0.082
t	.....	.....	3.210	0.859
Sig.	.....	.....	.01	.....
UNGRADED RURAL				
Dif.	.....	.....	.....	—0.287
SE_D	.....	.....	.....	0.090
t	.....	.....	.....	3.203
Sig.	.....	.....	.....	.01

Table IV compares the achievement of the four subsamples in terms of mean differences. The mean of the ungraded rural subsample is significantly smaller (.01) than that of the total sample and of the other subsamples.

Written Expression in Grade Seven

Quality

Table V shows the distribution of quality scores for all pupils in the grade VII sample. Of this sample 2.1 per cent (19 students) received a score of five, 19.1 per cent a score of four, 48.5 per cent a score of three, 26.3 per cent a score of two, and 3.9 per cent a score of one. The highest mean score was obtained by the city subsample. The town, graded rural, and ungraded rural subsamples follow in that order.

TABLE V

QUALITY SCORES, MEANS, AND STANDARD DEVIATIONS FOR FOUR SUBSAMPLES OF ALBERTA GRADE SEVEN PUPILS

Sample	Scores					Number of Students	Mean	Standard Deviation	Standard Error
	5	4	3	2	1				
City	9	68	162	81	10	330	2.955	0.824	0.045
Town	5	40	115	47	7	214	2.949	0.793	0.054
Graded Rural	2	31	81	49	6	169	2.846	1.032	0.079
Ungraded Rural	3	31	75	58	12	179	2.749	0.877	0.066
TOTAL	19	170	433	235	35	892	2.891	0.827	0.028

Table VI compares the achievement of the four subsamples in terms of mean differences. The means of the city and town subsamples were found to be significantly greater than the mean of the ungraded rural subsamples (.05). The latter was found to be significantly smaller than the mean of the total sample (.05).

Mechanics and usage

Table VII shows the distribution of scores in mechanics and usage for all pupils in the grade VII sample. Of this sample 3.6 per cent (32 students) received a score of five, 25.9 percent a score of four, 31.3 per cent a score of three, 18.3 per cent a score of two, and 20.9 per cent a score of one. The highest mean score was obtained by the city subsample. The town, ungraded rural, and graded rural subsamples follow in that order.

TABLE VI

COMPARATIVE ACHIEVEMENT IN QUALITY OF WRITTEN COMPOSITION OF GRADE VII PUPILS EXPRESSED AS MEAN DIFFERENCES

Sample	Town	Graded Rural	Ungraded Rural	Total Sample
CITY				
Dif.	0.006	0.109	0.206	0.064
SE_D	0.071	0.092	0.080	0.053
t	0.085	1.079	2.578	1.205
Sig.	.....	.....	.05	.....
TOWN				
Dif.	.....	0.103	0.200	0.058
SE_D	.....	0.096	0.085	0.061
t	.....	1.068	2.346	0.951
Sig.	.....	.....	.05	.....
GRADED RURAL				
Dif.	.....	.....	0.097	—0.045
SE_D	.....	.....	0.103	0.089
t	.....	.....	0.940	0.534
Sig.	.....	.....	.....	.....
UNGRADED RURAL				
Dif.	.....	.....	.....	—0.071
SE_D	.....	.....	.....	1.990
t	.....	.....	.....	1.968
Sig.	.....	.....	.....	.05

TABLE VII

MECHANICS SCORES, MEANS, AND STANDARD DEVIATIONS FOR FOUR SUBSAMPLES OF ALBERTA GRADE SEVEN PUPILS

Sample	Scores					Number of Students	Mean	Standard Deviation	Standard Error
	5	4	3	2	1				
City	16	95	107	53	59	330	2.867	1.156	0.064
Town	8	53	73	36	44	214	2.743	1.150	0.079
Graded Rural	3	35	54	42	35	169	2.578	1.086	0.084
Ungraded Rural	5	48	45	32	49	179	2.598	1.222	0.091
TOTAL	32	231	279	163	187	892	2.729	1.162	0.039

Table VIII compares the achievement of the four subsamples in terms of mean differences. The mean of the city subsample was found to be significantly greater than the means of the graded rural (.01) and ungraded rural (.05) subsamples.

TABLE VIII

COMPARATIVE ACHIEVEMENT IN MECHANICS AND USAGE OF GRADE VII PUPILS EXPRESSED AS MEAN DIFFERENCES

Sample	Town	Graded Rural	Ungraded Rural	Total Sample
CITY				
Dif.	0.124	0.289	0.269	0.138
SE_D	0.099	0.103	0.110	0.072
t	1.246	2.794	2.445	1.911
Sig.	.....	.01	.05	.....
TOWN				
Dif.	.....	0.165	0.145	0.014
SE_D	.....	0.115	0.121	0.088
t	.....	1.436	1.200	0.159
Sig.	.....	.....	.....	.....
GRADED RURAL				
Dif.	.....	.....	—0.020	—0.151
SE_D	.....	.....	0.124	0.092
t	.....	.....	1.612	1.635
Sig.	.....	.....	.....	.....
UNGRADED RURAL				
Dif.	.....	.....	.....	—0.131
SE_D	.....	.....	.....	0.099
t	.....	.....	.....	1.312
Sig.	.....	.....	.....	.....

Intercorrelations

Using measures of intelligence, language achievement on the California Language Test, scores on the quality of written composition and on mechanics and usage, intercorrelations were calculated as shown in Table IX.

Although none of these figures are high, all are positive. Further reference will be made to them below.

TABLE IX

INTERCORRELATIONS AMONG SCORES ON INTELLIGENCE, CALIFORNIA TEST, QUALITY OF WRITTEN COMPOSITION, MECHANICS AND USAGE

Correlated Measures	Grade IV			Grade VII		
	California Test	Quality	Mechanics	California Test	Quality	Mechanics
Intelligence	.55	.41	.33	.70	.44	.36
California Test	.....	.46	.42	.....	.55	.50
Quality	.....	.....	.26	.....	.....	.40

Errors in Mechanics and Usage

A count of the errors in spelling, punctuation and grammar was made for a slightly larger sample of Alberta grade IV and VII pupils (934 and 938 respectively). Figures 1 and 2 show the results of this count. Further reference to these data will be made below.

Interpretations and Conclusions

Achievement in urban and rural schools

A summary of the relative achievement of city, town, and rural pupils in written composition is provided in Table X. In general, the relationship of these scores is comparable to that in reading found by Carmichael and Rees.[3] Their analysis of possible reasons for the relationship is applicable to the present study.

Differences in intelligence may well be one factor. Reid found that mean scores for intelligence of the pupils in the Alberta sample ranked downward from city, through town and graded rural to ungraded rural subsamples.[4] The correlations between quality, mechanics, and intelligence shown in Table IX are positive, though not high.

If intelligence is a factor, it may be in some measure a function of the pupil's environment. Cultural opportunities in many rural areas are necessarily less than in towns and cities. This is especially true of the kinds of opportunity that lead to expertness in communication: the development of verbalism bears clear relationship to the breadth of social contacts and the richness and appropriateness of available printed material. While the radio is

[3]Carmichael and Rees, **op. cit.**, pp. 25-26.
[4]Reid and Conquest, **op. cit.**, pp. 45-46.

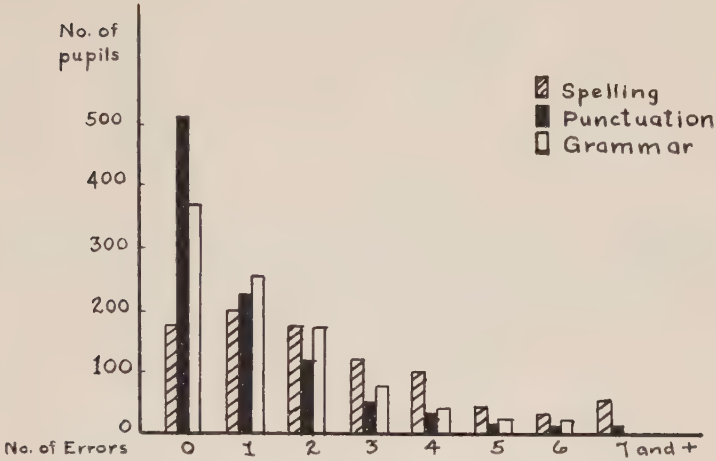

FIGURE 1. Number of errors in spelling, punctuation and grammar of a sample of 934 grade IV pupils.

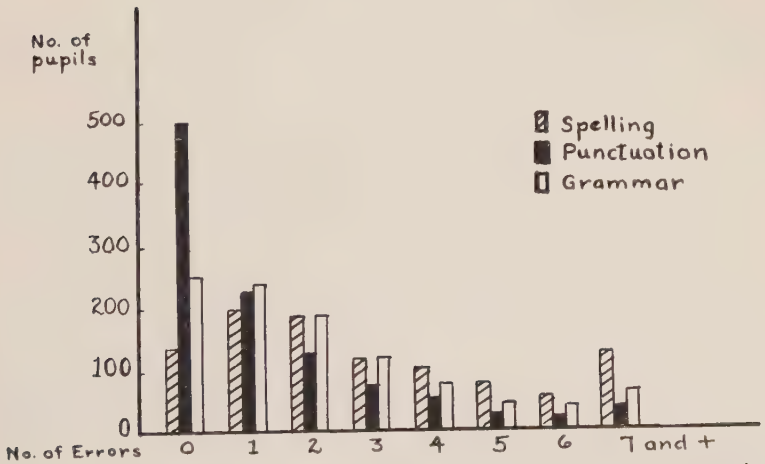

FIGURE 2. Number of Errors in spelling, punctuation and grammar of a sample of 938 grade VII pupils.

broadening the listening experiences of rural children, and while centralization and vanning are providing wider social contacts for them, it is doubtful whether their advantages are yet equal to those of town and city children.

The probability of a higher proportion of the foreign born in rural than in urban Alberta suggests a second and obvious explanation for differences in language scores. It might also suggest, in terms of the language handicap, an explanation for differences in intelligence scores.

TABLE X

SUBSAMPLES WITH MEAN SCORES SIGNIFICANTLY HIGHER THAN THOSE OF OTHER SUBSAMPLES AND OF THE TOTAL SAMPLE

Subsample	Grade IV		Grade VII	
	Quality	Mechanics	Quality	Mechanics
City	GR (.01) UGR (.01) TS (.05)	UGR (.01)	UGR (.05)	GR (.01) UGR (.05)
Town	GR (.01) UGR (.01)	UGR (.01)	UGR (.05)	
Graded Rural		UGR (.01)		

NOTE: GR—graded rural; UGR—ungraded rural; TS—total sample.
The table is to be read as follows: For grade IV, the mean *quality* score of the city subsample is significantly higher than that of graded rural and ungraded rural subsamples at the .01 level of confidence, and of the total sample at the .05 level; the mean *mechanics* score is significantly higher than that of the ungraded rural subsample at the .01 level.

The foregoing are relatively inflexible circumstances associated with the opening up of a new country. Teaching competency is—potentially at least—more controllable, and this competency may be a third factor. At any rate, it justifies conjecture with reference to differences in the scores of urban and rural students. Generally speaking, teachers with higher qualifications do seek and find employment in towns and cities. (It has been said with some truth that the rural divisions staff the city schools.) More attractive living and working conditions would encourage more superior rural teachers to remain in rural areas. An increase in teacher recruits from cities would tend to fill more of the available jobs there, further reducing the drain of competent rural teachers.

Achievement in grade IV and grade VII

The pattern of significant differences at the grade VII level is not so distinctive as at the grade IV level. There seems to be no clear reason for this finding. Perhaps three more years of school and community influence (as opposed to more exclusive and differential home contacts in the early school years) tend to level language facility.

Intercorrelations

It has already been pointed out that the correlations among scores on intelligence, the California Language Test, quality, and mechanics[5] are all positive but rather low. They are certainly too low to justify prediction or generalization with reference to the primary purposes of this study. They do, however, tend to confirm the view that achievement in mechanics and usage has less to do with intelligence than does the quality of ideas and their expression.

Spelling, punctuation, and grammar

The data presented in Figures 1 and 2 are based on an average of approximately 100 words for compositions in grade IV, and of 200 words for those in grade VII. In grade IV, in a random sample of 934 students, about 180 had no errors in spelling, 200 had only one, and 175 had two; in punctuation, some 515 of the 934 had no errors at all; in usage and grammar, 375 had no errors. In grade VII, more than 500 of the 938 students ranged from no errors to two errors in spelling, 420 had no errors in punctuation, and more than 650 had from no errors to two errors in grammar and usage.

These are encouraging figures. They suggest that large numbers of our students are writing mechanically correct English, and that their usage patterns are respectable.

Evaluating student writing

After experience with evaluation procedures in this study, much can be said in favour of a two-phase evaluation of student writing. This implies only in part the distinction between so-called "subjective" and "objective" procedures. It has more to do with the distinction between sense or spirit (quality) and form (mechanics) —a vital distinction, not only for purposes of accurate evaluation but for the much more important goals of criticism and improvement.

Evaluation for quality means the assessment of ideas and their presentation in terms of their sheer impact as communication (selection, organization, diction). Evaluation for mechanics means the assessment of formal facility or correctness (punctuation,

[5]See pages 13-14.

spelling, usage). The use of a check sheet may help in each of these processes, but it must be kept simple and uncomplicated. Otherwise the process of evaluation tends to degenerate into mere mathematical processes of addition and substraction. For the evaluation of quality, the development of local scales has been found highly desirable.[6]

BIBLIOGRAPHY

DeBoer, J. J. and others. *Teaching Secondary English.* New York, McGraw-Hill Book Company, 1951.

Gurrey, Percival. *The Teaching of Written English.* London, Longmans Green and Company, 1954.

Hudelson, Earl. *Hudelson English Composition Scale.* Yonkers-on-Hudson, World Book Company, 1923.

Jewett, Ida A. "Simples from a Composition Reader's Scrip." *Teachers College Record* XXXIX: 1 (October, 1937), pp. 16-24.

LaBrant, Lou. *We Teach English.* New York, Harcourt Brace and Company, 1951.

Mirrielees, Lucia B. *Teaching Composition and Literature.* New York, Harcourt Brace and Company, 1952.

National Council of Teachers of English. *The English Language Arts.* New York, Appleton-Century Crofts, 1952.

Williams, G. Perrie. *The Northamptonshire Composition Scale.* London, Harrap and Company, 1933.

[6]See Appendix, pp. 53-61.

ROMAN CATHOLIC SEPARATE AND PUBLIC SCHOOLS IN ALBERTA

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The North-West Territories Ordinance of 1884 authorized the establisment of Denominational Schools with powers equal in every way to those of the Public Schools. Between 1887 and 1901 a number of Ordinances gradually changed these educational provisions and substituted a unified, centrally controlled system for the denominational one first instituted, but definitely provided for the maintenance and organization of separate schools for minority groups. The Alberta Act of 1905, by which Alberta became a province, established an educational system which was essentially the same as that which was provided for by the North-West Territories Ordinance of 1901. The more recent system, the large unit of administration introduced in 1936, recognizes separate schools as an integral part of the provincial educational organization.

Generally speaking, Separate and Public Schools are the same. They follow the same course of studies, use the same textbooks, meet the same standards, with teachers prepared in the same training schools. Essentially, however, Catholics believe there is an important difference. This difference grows out of the aims and objectives of the respective schools. Since secular schools are composed of pupils of so many and varied creeds, it is most difficult to arrive at unified goals and purposes, and equally difficult to give moral and religious instruction. The ultimate objective of Catholic education, on the other hand, can be stated very simply. In the words of Pope Pius XI:

> The proper and immediate end of Christian education is to cooperate with divine grace in forming the true and perfect Christian, that is, to form Christ Himself in those regenerated by Baptism . . .
>
> For precisely this reason Christian education takes in the whole aggregate of human life, physical and spiritual, intellectual and moral, individual, domestic, and social, not with a view of reducing it in any way, but in order to elevate, regulate, and perfect it, in accordance with the example and teaching of Christ.[1]

The present study is concerned with the beginnings, the problems, the trends and the development of Roman Catholic Separate and Public Schools from 1885 to 1953 in the territory which is now Alberta.

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[1]Pope Pius XI, **Christian Education of Youth**, p. 32.

Pioneer Days and Preparation for Provincial Status

Early Territorial Period to 1885

Before 1875 relatively few people were interested in Western Canada. Missionaries eager to spend their lives in the service of God and of their fellowmen, explorers and fur traders in search of adventure and wealth were among the first white men to cross the plains. No formal education, however, was undertaken until 1861. In that year Father Lacombe opened a school for the Company's clerks and servants within the Hudson Bay Fort at Edmonton. An Oblate novice, Brother Scollen (later Father Scollen), was the teacher of this, the first school west of Fort Garry.[2]

In 1859 the Sisters of Charity of Montreal arrived at Lac Ste. Anne and opened a boarding school, orphanage, hospital, and refuge for the aged. By 1862 another school was in operation at Lac La Biche, and in 1863 the Sisters established a school in the already flourishing mission of St. Albert. Progress was steady. Bishops Taché and Grandin state in a memoir sent in June 1871 to Cardinal Barnabo, prefect of the Propagation of the Faith, that within the limits of the territory which was to comprise the future diocese of St. Albert "there are five elementary schools, all the pupils of which are Catholics."[3]

Throughout this early period the State gave no help towards education; the whole burden was borne by the parents and the missionaries. In 1875, five years after Rupert's Land and the North-West Territories became part of the Dominion of Canada, the Government of the Dominion made legislation regarding education in the North-West Territories.

The North-West Territories Act of 1875 made provision for Separate Schools with powers similar to those of Ontario and Quebec.[4] The purpose of establishing such a system seems to have been to lay down a general principle with respect to public instruction which would be acceptable to both parties in the Dominion parliament. "It was rather expected by the Federal Parliament of 1875," according to Scott, "that the minority in the North-West Territories would be Protestant."[5] While the North-West Territories Act provided for the development of schools, it made no attempt to secularize education; rather it strengthened the hands of those in whom education reposed, the Church and the parents.

Middle Territorial Period, 1884-1892

On August 6, 1884, an ordinance providing for the organization

[2]K. Hughes, **Father Lacombe,** p. 88.
[3]Rev. A. G. Morice, **Historiore de L'Eglise Catholique dans L'Ouest Canadian, II**, p. 244.
[4]North-West Territories Act, **Statutes of Canada 1875**, Chap. 45.
[5]W. Scott, Extracts from Hansard Debates, March 31, 1905 (Hansard p. 3614), cited by G. M. Weir , **The Separate School Question in Canada,** Appendix I, p. 243.

of schools in the North-West Territories was passed. The keynote of the system thus introduced was the establishing of a Board of Education appointed by the Lieutenant-Governor-in-Council. This Board was not to exceed twelve members, six of whom were to be Roman Catholics, six Protestants. In addition to the ordinary powers granted while sitting as a body, it could resolve itself into two sections, one Catholic and one Protestant. Each section had the control and management of the schools, the power of grading and licensing teachers, and the right to select books and to appoint inspectors for the schools of its section. The system was most satisfactory to Roman Catholics, but it was in force for only a few years.

Two conditions were primarily responsible for the changes which were soon effected. The world-wide tendency to secularize education under state control became strong in the latter half of the nineteenth century, and the North-West Rebellion of 1885 with its aftermath of white immigration quickly gave rise to a Protestant majority unsympathetic to the Catholic cause. Consequently, between 1885 and 1892 a series of amendments to the School Ordinance of 1884 were enacted. The result was that the powers of the Board of Education were seriously curtailed[6] and definite steps were taken toward the abolition of denominational schools.

Tremendous activity in the educational field characterized the period immediately following the passing of the Ordinance of 1884. Between 1885 and 1892 twelve Roman Catholic Public and four Roman Catholic Separate School Districts were organized. (See Table I.)

The teachers in three of the four separate schools were members of the religious congregation, Sisters Faithful Companions of Jesus, who came from England to Western Canada in 1883. The perils of the rebellion of 1885 made it unsafe for them to remain in their already well established school in St. Laurent, Saskatchewan, and necessitated their moving farther west. A log house on the banks of the Elbow, on the site of the present Sacred Heart Convent in Calgary, became their first school in Alberta. This was truly an educational institution of the highest order. Through it the old-world culture was brought to the pioneers of the West. Many adults of all denominations and children from surrounding districts as well as residents benefited by the instruction given in music and all types of needlework and art.[7]

In 1888 the Sisters opened a convent and boarding school in Edmonton and from its inception they taught in St. Joachim's Roman

[6]Ordinances of the North-West Territories, 1888, No. 41.

[7]Missions des Oblats de Marie Immaculée Tame XXIII (p. 19), cited by R. P. J. Chevalier, O.M.I., **Origine et Premiers Developpements de Calgary**, p. 81.

Catholic Separate School District. Two years later another group of Sisters took charge of the Lethbridge Separate School, which had been opened in April 1889, and was taught by Mr. C. McRae. The Separate School in Fort Macleod was under the direction of Mr. Wm. J. MacDonald.

Outstanding progress was made in education in Catholic schools from 1885 to 1892. The standards achieved were high, and the cultural influence extended to the entire community.

TABLE I

ROMAN CATHOLIC SEPARATE AND PUBLIC SCHOOL DISTRICTS ORGANIZED 1885-1905

DISTRICT	Number	Date Organized	Enrolment June 1953
Roman Catholic Public			
Saskatchewan	2	1885	73
St. Albert	3	1885	450
St. Leon (centralized at St. Albert)	4	1885	.....
Cunningham (centralized at St. Albert)	5	1885	.....
Bellerose (centralized at St. Albert)	6	1885	.....
St. Francis Xavier (closed in 1886)	7	1885	.....
St. Agnes (became Beauvais P.S.D. No. 18 in 1910)	18	1888	.....
St. Thomas Duhammel (became Duhammel P.S.D. No. 627 in 1901)	26	1889	.....
Lac Ste. Anne (became Lac St. Anne P.S.D. No. 29 in 1951)	29	1890	.....
Creuzot (disorganized in 1932)	34	1891	.....
Thibeault	35	1892	440
Glengarry	41	1895	2 classrooms
Granger (centralized at St. Albert)	42	1895	.....
Vegreville (centralized at Vegreville)	44	1895	.....
Rose Ridge (centralized at St. Albert and Morinville)	45	1896	.....
Volmer (originally Boulais—centralized at St. Albert)	47	1897	.....
Chorest (centralized at Beaumont)	51	1901	.....
Roman Catholic Separate			
Calgary (originally Lacombe)	1	1885	2,552
Edmonton (originally St. Joachim)	7	1888	5,681
Holy Cross, Fort Macleod (disorganized 1937)	8	1888	.....
Lethbridge	9	1889	780
St. Anthony (merged with St. Joachim 1913)	12	1894	.....
Gleichen (disorganized 1952)	14	1900	.....
Sacred Heart, Wetaskiwin	15	1901	69

Data from *Reports of Board of Education of North-West Territories* 1886-1890; *Annual Reports of the Department of Education, Alberta,* 1906-1954; Records of the Department of Education, Alberta.

Later Territorial Period, 1892-1905

In 1892 and 1901 ordinances of "doubtful validity"[8] which completely centralized and "radically curtailed separate school privileges"[9] were passed by the Territorial Assembly. By the Ordinance of 1892 the Board of Education was abolished and education was placed in the hands of the Lieutenant-Governor-in-Council (the governing body being known as the Council of Public Instruction). In 1901 this body was abolished and its duties and powers were handed over to a Commissioner who was a member of the government. Thus the Department of Education was organized.[10] The Act stated that the first school in any district must be a public school. If a minority group so desired, they could create a separate organization, but the control of the teaching, inspection, and textbooks was centralized under the Department of Education. It is significant that no Roman Catholic Public School Districts were organized after 1901.

Records show that during this period, when the status of separate schools was somewhat insecure, only three Roman Catholic Separate School Districts were organized. Between 1895 and 1901 six Roman Catholic Public School Districts, all one-room rural schools, were recognized. (See Table I.)

The Catholic schools in the larger centres grew steadily during these years and maintained a high standard of achievement. The enrolment in the separate schools increased from 264 in 1890 to 980 in 1906.

From Provincial Autonomy to the Enlarged Unit of School Administration

The great "School Question" of 1905, which excited Canada as few political issues had since Confederation, began as the question of whether religious instruction in the schools of the province was to be continued, and grew into the much more momentous one of whether the government at Ottawa could dictate to a province concerning its educational system.

It was the intention of the Liberal Government at Ottawa, under the leadership of Sir Wilfred Laurier, to incorporate in the Alberta Act a clause similar to the one in the North-West Territories Act of 1875, thus requiring the province to continue separate schools and religious instruction.

To the Protestants, however, it became not only a question of religious instruction in schools, but also of interference in provincial affairs by the federal government. A bitter struggle ensued in

8G. M. Weir, **The Separate School Question in Canada**, p. 65. Mr. Weir was Professor of Education and Head of the Department of Education, University of British Columbia.

9**Ibid.**

10Minutes of the North-West Territories Council Sessional Papers, 1901.

which a crisis in the government was narrowly averted. Happily a compromise was effected. The contentious clauses proposed by Sir Wilfred Laurier were dropped from the bill and an amended section validating the Territorial Ordinance of 1901 was substituted.

The Alberta Act of 1905, then, made provision for religious instruction, but with the proviso that education be left entirely under provincial control. The separate schools were to be subject to the same regulations as the public schools, they were to have the same inspectors, and their teachers were to have the same qualifications. This afforded a practical guarantee of the same standard of efficiency and reduced to a minimum the difference between Public and Separate Schools.

The question has frequently arisen as to whether the framers of the constitution intended that the separate school, Roman Catholic or Protestant, should be on equal footing with the public school. The answer seems to be in the affirmative. The judgment of a member of the Supreme Court of Canada, Mr. Justice Anglin, is a confirmation of this interpretation. He said, "Equality of treatment and equal rights and privileges for public and separate schools would appear to be the spirit of the school law."[11]

Accordingly separate schools have been financed in the same way as public schools, namely by local taxation supplemented by grants from the Department of Education. Theoretically there has been no discrimination in the allocation of either of these sources of money; in practice, until the recent amendment of the Alberta School Act in 1952, it has been very difficult for separate schools to collect a just portion of corporation taxes, a substantial source of income. Because separate school districts often have a relatively low assessed value their income from local taxation on privately owned property, too, is frequently lower than that of the public school district. Government grants for school purposes have always been appropriated without discrimination.

During the first decade of the twentieth centry there was a great movement toward the west. Pioneer conditions in Alberta soon gave way to community centres. One of the most convincing proofs of the rapid development of the province was the establishment of numerous schools. Catholics were keenly aware of the rights they possessed by the Alberta Act: accordingly Catholic education was provided in many districts. In central Alberta where Catholics predominated a number of public schools provided this benefit; in the south of the province where Catholics formed a minority a number of Separate School Districts were organized. Between 1905 and 1920 ten such districts were formed, eight south of Edmonton. (See Figure 1 and Table II). Between 1920 and 1936

[11] Weir, **op. cit.**, p. 73.

MAP OF ALBERTA

SHOWING LOCATION OF CATHOLIC SCHOOL DISTRICTS ORGANIZED 1885-1953

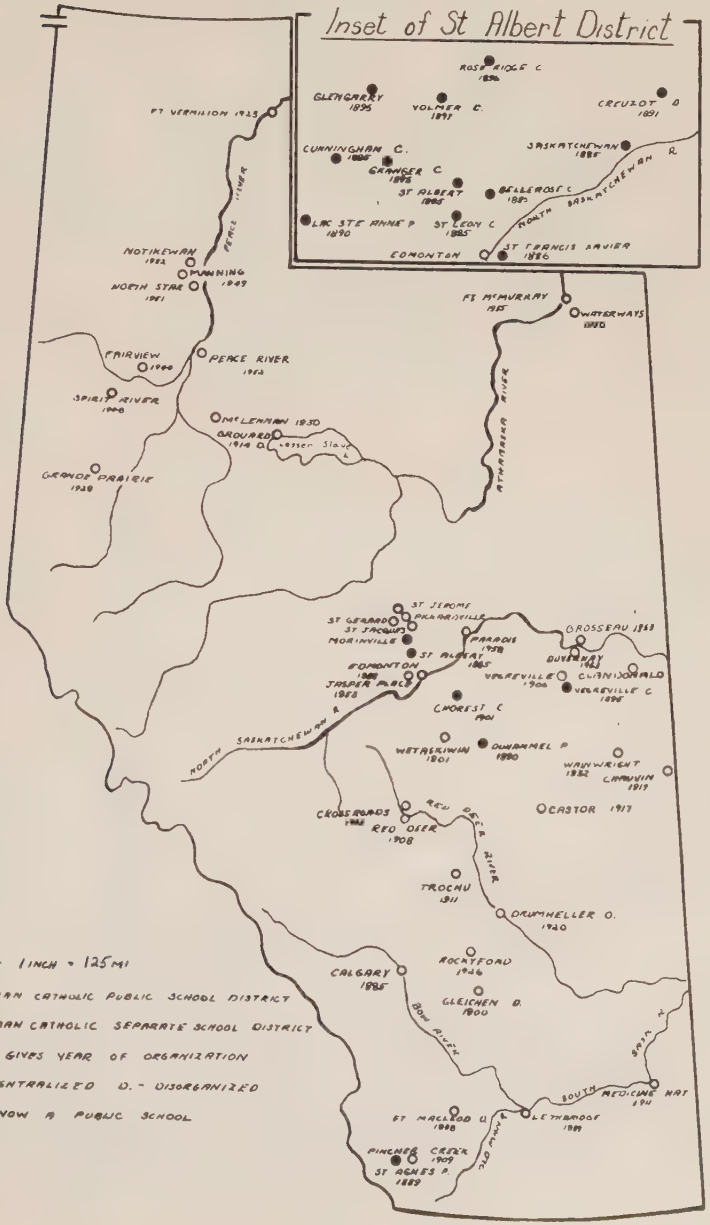

FIGURE 1

seven Roman Catholic Separate School Districts, four in the northern section of the province, were recognized.

The security afforded by the passing of the Alberta Act of 1905 together with the steadily increasing population had beneficial effects on the already established schools. In both Calgary and Edmonton, the two largest centres, there were in 1920 eight schools in operation with a combined enrolment of 3,320 pupils. Progress was less marked during the depression years, but it was nevertheless continuous. In 1936 there was a high school unit in all but five of the separate school systems of the province. Only in Fort Vermilion, Wetaskiwin, MacLeod, McLennan, and Chauvin was instruction confined to the first eight grades. Morinville and St. Albert of the Roman Catholic Public Schools offered high school facilities.

TABLE II

ROMAN CATHOLIC SEPARATE SCHOOL DISTRICTS ORGANIZED 1905-1936

DISTRICT	Number	Date Organized	Enrolment June 1953
St. Martin's, Vegreville	16	1906	137
St. Joseph's, Red Deer	17	1908	266
St. Michael's, Pincher Creek	18	1909	197
North Edmonton (merged with St. Joachim's 1913)	19	1911	.....
Pontmain, Trochu	20	1911	82
St. Louis, Medicine Hat	21	1911	561
Grouard (disorganized 1918)	22	1914	.....
Theresetta, Castor	23	1917	113
St. Aubin's, Chauvin	24	1919	64
St. Theresa, Drumheller (disorganized 1920)	25	1920	.....
Fort Vermilion	26	1923	46
St. Rita's, Rockyford	27	1926	96
St. Joseph's, Grande Prairie	28	1928	186
Clandonald	29	1930	107
Guy, McLennan	30	1930	303
Wainwright	31	1932	148
St. John's, Fort McMurray	32	1935	116

Data from *Annual Reports of the Department of Education, Alberta,* 1906-1954.

The Larger Unit of Administration, 1936-1953

Weir, after careful study of the constitutional and legal aspects of the problem of minority school rights, makes it clear that "according to the weight of competent authority"[12] minority school rights cannot be questioned. Therefore, when in 1936 the large unit of administration was inaugurated in Alberta, the legislators sought

[12]Weir, **op. cit.**, p. 3.

to protect denominational rights by the enactment of a section of the School Act relating to Roman Catholic or Protestant school districts that found themselves included in school divisions in which such districts were in the minority. The Act empowered a district in a division to demand the appointment to their district school of a teacher of the religious faith of the majority of the ratepayers in the district.

While by law no change has been made in the minority rights in the province, the framework within which these laws function has been so modified that in actual practice the position of Catholic schools in Alberta differs much from that which existed before 1936.

The enrolment in the Thibeault (Morinville), St. Albert, and Saskatchewan schools has greatly increased since the formation of the large unit of administration, although Thibeault is not a divisional school. In these Roman Catholic Public School Districts the beneficial results of increased facilities and improved scholastic divisions which follow divisional organization are exemplified. In the separate school districts, although a similar advantage is generally enjoyed, there are some disadvantages.

Separate schools may still function: they are, in fact recognized as an integral part of the provincial school system. Except in the larger cities, however, the number of parents who may send their children to separate schools without bearing a double burden of cost is very limited. This is due to the fact that the right of a separate school district to collect taxes is limited to the individual school district as originally formed. There is no provision made for transfer of assessment within a school division to the public or separate school according to the religious faith of the property owner. Separate schools are obliged to charge a fee in order to be able to give instruction to the pupils of the division who choose to attend these Catholic schools. The parents of these pupils must, therefore, pay taxes to the divisional school and fees to the separate school if they wish their children to have a Catholic education. In some cases, Pincher Creek and Vegreville for example, the Divisional Board pays the fees to St. Michael's and St. Martin's schools for all Catholic children of the division.

A further disadvantage arises from the fact that while the separate school district is considered the unit for the purpose of tax collection, the entire division (or, in the case of city and town schools, the public school district) is considered the unit when it is a question of paying the equalization grant.[13]

One of the most recent trends in Catholic education to offset the difficulties arising from divisional organization has been the group-

[13]Section 5, **Grant Regulation** 1853, Government of the Province of Alberta.

ing of separate school districts similar to that in consolidated school areas. Fort McMurray, Picardville, Manning, Red Deer, and Brosseau are such centres. In areas in which the Catholic population is relatively great this is a satisfactory arrangement, but in many regions it is not practicable.

This study of the Catholic schools of Alberta would be incomplete without a brief consideration of bilingual education. In the mission schools of the West the French language was used almost exclusively. As time passed and English-speaking settlers came west in increasing numbers, a language problem arose. Ultimately a satisfactory agreement was reached whereby it was "permissible for the board of any district to cause a primary course to be taught in the French language."[14] This provision remains unchanged in the School Act of 1952.

TABLE III

ROMAN CATHOLIC SEPARATE SCHOOL DISTRICTS ORGANIZED 1936-1953

DISTRICT	Number	Date Organized	Enrolment June 1953
Paradis (centralized at Saskatchewan R.C.P.)	33	1938	.....
Ste. Bernadette, Picardville	34	1944	105
St. Thomas More, Fairview	35	1948	145
Ste. Marie, Spirit River	36	1948	32
Rosary, Manning	37	1950	166
St. Peter's, Waterways (pupils attend St. John's, Fort McMurray)	38	1950	.....
St. Jerome (pupils attend St. Bernadette)	39	1951	.....
St. Jacques (pupils attend Ste. Bernadette)	40	1951	.....
St. Gerard (pupils attend Ste. Bernadette)	41	1951	.....
Mazenod, North Star (pupils attend Rosary)	42	1952	.....
Immaculate Conception, Peace River	43	1952	30
St. Monica, Notikewan (pupils attend Rosary)	44	1953	.....
Jasper Place	45	1953	Opened Sept. 1953
Cross Roads (pupils attend St. Joseph's, Red Deer)	46	1953	.....
St. Laurent, Brosseau	47	1953	Opened Sept. 1954
Duvernay (pupils attend St. Laurent)	48	1953	.....

Data from *Annual Report of the Department of Education,* Alberta, 1936-1954.

[14] Section 184, **Alberta School Act.**

It is generally recognized that the provisions for bilingual education in the province are generous. The effective organization and activity of *L'Association Canadienne—Française De L'Alberta* and *L'Association Des Instituteurs Bilingues de L'Alberta* in 1925 and 1926 have resulted in an increased interest and standard of achievement in the study of French. In 1953 approximately 160 bilingual teachers taught in the bilingual schools of the province.

Summary

The oustanding development of Alberta in recent years in industry, economy and natural resources has been paralleled by her achievement in the field of education. Sixteen Roman Catholic Separate School Districts were organized between 1936 and 1953; once organized these districts developed rapidly. (See Figure I and Table III.) In the Edmonton and Calgary separate school systems the growth was most remarkable. The development in Lethbridge, Red Deer, Medicine Hat, Grande Prairie, Fort McMurray, McLennan and Fairview has been proportionately great. In 1953 there were 11,982 students enrolled in the sixty-three schools of the thirty-three Roman Catholic Separate School Districts in Alberta.[15]

BIBLIOGRAPHY

Alberta Catholic Education Association Bulletin, 1948-1952. Official Organ of the Alberta Catholic Education Association, published quarterly by Survivance Printing Ltd., Edmonton.

Annals of Sacred Heart Convent, Calgary, 1885-1900. Unpublished Manuscripts in the Sacred Heart Convent Library.

Annals of Immaculate Conception Convent, Edmonton, 1888-1900. Unpublished Manuscripts in the Sacred Heart Convent Library, Calgary.

Chevalier, Rev. P. J., O.M.I., *L'Origine et les Premiers Developpements de Calgary.* Calgary, Paroisse Sainte-Famille, 1934.

Goresky, I. *The Beginning and Growth of the Alberta School System.* Unpublished Master's Thesis, University of Alberta, May 1944.

Hughes, K. *Father Lacombe.* Toronto, William Briggs, 1914.

Hutchinson, J. M. *The Educational System of Alberta.* Calgary, Alberta Job Printers, 1916.

Jonason, J. C. "The Large Unit of School Administration in Alberta." *Canadian Education* VII: 2 (March, 1952), pp. 51-63.

Morice, Rev. A. G. *Histoire de L'Eglise Catholique dans L'Ouest Canadien.* Montreal, Granger Frères, 1912.

Ordinances and Journals of the North-West Territories, 1884-1904..

Pope Pius XI. Encyclical, *Christian Education of Youth.* New York, The America Press, 1936.

Reports of the Board of Education, North-West Territories, 1885-1891.

Reports of the Council of Public Instruction, North-West Territories, 1896-1900.

Reports of the Department of Education, Province of Alberta, 1906-1954.

Statutes of Canada 1870, 1875, 1888, 1905.

Statutes of Alberta 1905-1953.

Weir, G. M.. *The Separate School Question in Canada.* Toronto, The Ryerson Press, 1934.

[15]Annual Report of the Department of Education, Alberta, 1954.

A COOPERATIVE STAFF PROJECT TO IMPROVE READING

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A Problem Is Recognized

The reading situation in the school was bad, or so the staff thought. The newly appointed assistant principal found that his class, when rated by standard reading tests, fell in the bottom decile of all the city classes in that grade. The experienced teachers maintained that reading "was going to the dogs." The new teachers said little, but mentioned that the children seemed to read below their abilities as indicated on the cumulative records. One teacher stated that the superior children in her class were not reading as well as they should, and as a result were handicapped in their classroom work. Reading tests administered to the three hundred junior high school students revealed a standard of reading so low as to alarm the teachers. The staff were convinced that something should be done.

A meeting was called to discuss the situation. Suggestions were brought forward and debated, with consensus on the following points:

1. Not much was to be gained by conjecture about the reasons for the low general standard of reading. It could have resulted from double-shifting for five years, from ineffective teaching, from the great turnover in staff personnel, from overcrowded classrooms, from inadequate reading material and library facilities, or from a combination of these and other factors.
2. A special reading program should be initiated in the elementary school and carried out during the current year.
3. A qualified reading expert should be called in to give the staff guidance in organizing a program for the improvement of reading.
4. The principal should act as recorder of the program activities.

Having decided to initiate a program of reading improvement, the staff invited the Director of Elementary Education to assist in clarifying the problems involved. The main points of discussion were related to objectives, scope and sequence, essentials of a reading program, planning instruction, allotment of time, program balance, grouping, remedial teaching, developmental reading and evaluation.

The most contentious question was grouping for instruction. Many thought that there would be difficulties working in large classes with three groups of students, but since there were no alternative proposals for meeting individual differences, the staff unanimously agreed to give the grouping a trial. Free discussion, with all members participating, was an encouraging aspect of this meeting.

A Program Is Launched

At the next meeting one of the group members proposed the following as a basis for our program:

> A teaching plan or procedure is by nature an experiment. To judge its success in the teaching of reading, two factors must be considered: its efficiency in improving reading abilities and its power to establish the desire for reading. If following the use of a given method, the reading-achievement scores on reliable standard tests indicate that the children are reading up to capacity and if it is evident that a great deal of well-planned voluntary reading is under way, the classroom procedure employed is generally satisfactory.[1]

This kind of thinking provided the basis for the program. It was further shaped by many ideas gained from professional reading, as follows:

1. The teacher must have specific objectives for each child or each group of children in her class.
2. The teacher must be familiar with the individual differences of her pupils.
3. The teacher must make adequate provision for differences in the reading abilities of pupils.
4. The teacher must know the books that are available to her pupils.
5. The teacher must have a definite plan for observation of pupils' growth in voluntary reading habits.
6. The teacher must have definite plans for the motivation of reading.
7. Oral reading is made effective by maintaining interest.
8. There must be full attention to growth in vocabulary.
9. There must be training in oral and written recall.
10. There must be definite instruction in the improvement of study skills.
11. Instruction in silent reading is characterized by insight into many problems and needs.

It was decided that standardized reading tests would be used to test pupils in all grades except grade I, where the Detroit Intelligence Test would be used for grouping. The test results would give

[1] D. D. Durrell, **Improvement of Basic Reading Abilities**. Yonkers-on-Hudson, World Book Company, 1940, p. 4.

a base line from which to measure any change in the basic skills of reading.

Tests and records

The following tests were obtained and administered:

Gates Primary Reading Test—Form III
Gates Advanced Reading Test—Forms I and II
California Achievement Test—Form A
McCall-Thorndike—Form II

It was decided that the Division II teachers might obtain from the cumulative record cards much information regarding individual differences and achievement scores. It was further decided that some serious consideration should be given to the reading deviates, and provision made for their needs.

Reading materials

Reading materials at various levels were thought to be a necessity in all grades. The city Director of Elementary Education for public schools cooperated in supplying through his department much useful material. Staff members themselves went about the job energetically, and the principal was kept busy trying to meet their requests.

As a result of the previous discussions about grouping, it was decided to set aside separate series of readers for the exclusive use of slow and of advanced students. As a means of maintaining interest, this technique looked promising. Two different series of readers were used in the developmental program. All teachers, including the critics of grouping, were happy about these arrangements.

A recently completed elementary school library needed additional materials. The committee in charge of the central elementary library surveyed the situation and added five recently published children's magazines. Three hundred dollars of school funds were spent on new books. The Home and School Association donated one hundred dollars, two members assisting the teachers in the selection of books.

There was keen interest in the book phase of the program. The teachers agreed that an amount not exceeding ten dollars per room might be used to purchase books for the room library in order to meet the specific reading needs of the pupils in each class. This amount was paid from the school's account.

Interim Evaluation

Shortly after the Christmas holidays a meeting was called to consider the progress of the program. The staff discussed their

difficulties and various techniques which they had found effective in creating an interest in reading. One of the teachers outlined a promising plan for integrating reading and the enterprise program. Two decisions were made:

1. To set up a committee to bring in suggestions for evaluation.
2. To invite a resource speaker from the Faculty of Education.

Meeting with consultant

The Faculty of Education consultant met with the group a few weeks later. This was one of the best meetings to date. The chairman gave the speaker the floor. Her talk, in which she invited members to interrupt and discuss points, was keenly followed. The main emphases were as follows:

1. Testing and grouping
2. Providing for individual differences
3. The developmental program and provisions for slow readers
4. Involving all students in the reading program
6. The use of self-evaluation charts by pupils
7. Special techniques for retarded readers
8. New materials, books and magazines for the elementary school
9. Spelling and phonics (especially for the slow student)
10. Speed and comprehension

Criteria for evaluation

When the committee on evaluation had reported, the meeting adopted its suggestions with only a few changes. Criteria were based on the following questions:

1. Are our techniques working effectively toward attaining our ends?
2. Are the children showing improvement in the basic skills?
3. How successful is the integration of reading and enterprise?
4. Has each teacher adequate materials to carry out the program?
5. Are library facilities adequate?
6. Is provision being made for individual differences?
7. Are the children showing an increased interest and pleasure in reading?
8. Are more children becoming library members?
9. Is our expenditure of time yielding worth-while dividends?
10. Are we attaining our objectives?

After frank and widespread discussion the staff decided that no major changes were necessary in the operation of the program. Some minor changes were suggested, but on the whole it was felt that satisfactory progress was being made.

At the next meeting it was decided that Division I and Division II teachers should meet separately to make plans for a final evaluation near the end of May. It was planned that this evaluation should involve students and parents. It was further decided that:

1. Improvement in the basic skills could be measured by standardized reading tests.
2. Improvement of interest in and appreciation of literature and poetry was important. This was to be evaluated subjectively.
3. Careful collection of evidence was necessary.
4. The group could make judgments regarding the effectiveness of the program in meeting the objectives.
5. The knowledge gained would be of great help in carrying on reading instruction in subsequent years.

Evidence of professional growth

In meeting the needs of deviates, the staff members did well. Three students with speech defects were referred to the University Speech Clinic. One of them showed startling improvement. Another with an emotional block (five years in English and Canadian schools, with a reading score of grade 1.2) was given an individual program: her teacher reports favorable progress.

Efforts to improve instruction and create reading interest were much in evidence. Reading tables, reading corners, and book jacket displays appeared in all rooms. Books were taken from cupboards and placed in recently requisitioned bookcases and display racks.

There was an aroused interest on the part of teachers. The teaching of reading became a vitalized part of the school program, with enthusiasm and activity generally apparent. Teachers commented on the progress of the clever children. Instructional methods became more flexible.

The staff decided to arrange a reading display at the "Open House" for parents during Education Week. A committee grouped together on tables and display boards the types of reading materials used in a modern reading program. The display was a centre of interest for parents throughout the evening.

The professional growth of staff members appeared to stem from participation in a program in which the group set its objectives and decided to work towards the effective attainment of them. A further benefit was that of increasingly fine personal relations among the teachers. The spirit of cooperation in the reading program appeared to carry over into all activities.

The principal's role

The principal had an active part in helping to carry through the program. Although serving as a member of the group, he performed additional functions as follows:

1. Providing leadership in the initiation of the program.
2. Providing material and resources.
3. Coordinating staff activities.
4. Acting as a resource person.
5. Building morale—giving encouragement, helping with difficulties, etc.
6. Facilitating the exchange of ideas and information.
7. Helping to establish a procedure for evaluation, particularly group evaluation.
8. Encouraging the initiation of techniques and procedures desired by the staff.
9. Establishing a democratic attitude towards supervision.
10. Providing for the reading needs of teachers.
11. Publicizing teachers' programs at Home and School Association and other public meetings.
12. Working cooperatively with the special supervisors in the city system.

Final Evaluation

During the latter part of May the staff was busy gathering data for evaluating the success of the program. Evidence was gathered from the following sources:

1. Standardized reading tests administered, scored and tabulated for all the grades.
2. Attractive questionnaires sent to all parents. (These questionnaires sought information regarding their children's reading interests, parent cooperation, home reading habits and home library facilities. Only four parents failed to return the completed forms.)
3. Three hundred questionnaire sheets distributed to the students (different forms for Divisions I and II).
4. A summary compiled for each form of the questionnaires.

With this material on hand, the staff met for a final meeting on June 19. The purpose of this meeting was threefold:

1. To pass judgment on the success of the reading program.
2. To discuss the difficulties encountered and the means used in attempting to overcome them.

3. To suggest techniques for improving reading instruction in the future.

The meeting agreed to adhere to the evaluation committee's outline. A summary of the discussion follows:

Has grouping proved to be an effective method of instruction in carrying out a developmental program in reading?

The staff were in unanimous agreement that the grouping method had proved to be successful. It was their opinion that this technique, along with other features of the plan designed to provide for individual differences, did assist children in attaining reading levels commensurate with their abilities. Many difficulties had been surmounted in carrying out this phase of the program.

It was agreed that flexibility should be maintained in all groups so that children might progress from one group to another as their individual reading abilities developed. It was further agreed that the problem of keeping three groups profitably engaged in learning activities could be met by careful planning. The teachers felt that, as the program progressed, they had become more proficient in the necessary organization.

Has satisfactory improvement in basic reading skills been achieved?

The group considered that the improvement in basic reading skills had been satisfactory. With average classes, it might be expected that the children in each grade would show a median gain of eight months during the course of the reading program. Every class exceeded this expectancy, the average gain being fourteen months.

Much discussion centred around the use of standardized tests. Many teachers had used them during the program for diagnostic purposes, for noting individual improvement, and for maintaining flexible grouping. There was agreement on the following points:

1. Many of the tests in use in the schools have outlived their value because the children have become familiar with them.
2. There seem to be inconsistencies in the results from some tests.
3. Tests which reduce the guessing factor should be made available.
4. There should be a greater range of tests.
5. Diagnostic tests serve a better purpose than general reading tests for guiding improvement of individual.

Has necessary provision been made for the establishment of good reading practices and growth in reading interest?

The staff felt that the objective of creating reading interest had been accomplished. The questionnaires returned by the parents and

students verified this judgment. Twenty-one techniques outlined by the staff were recorded as indicating how reading interest had been encouraged.

Has sufficient money been expended during the year to provide reading material for all students?

The teachers agreed unanimously that there was still a lack of reading material in the school unit. It was decided that ways and means should be considered to increase present library facilities. The library improvement program is to be continued and expanded each year as funds are available.

Has there been developed an interest in and desire for more reading on the part of the pupils?

The consensus was that the principle of involving the students, teachers, and parents in the reading program is an excellent one. The tabulation of the questionnaires indicated that children and parents were much interested in reading and had developed an appreciation of this phase of the school program. As a result of the replies to the questionnaire on book lists and children's magazines, the staff decided to compile a bibliography of books and magazines for the guidance of parents. This bibliography is to be published in attractive booklet form and distributed at a Home and School meeting in the fall term.

Is a group attack on a problem one of the better ways of conducting an action experiment of this nature?

There was unanimity regarding the success of this method within a school unit. The following gains were specifically noted:

1. Professional interest was created.
2. Each member gained by the pooled resources of the group.
3. The members became more intimately acquainted with each other.

Has worth-while assistance been given by supervisory officials in carrying out the program?

The meeting felt that the supervisory officials had been of great help. The central supervisory staff cooperated by making available the materials required for the program, by providing resource leadership and by giving helpful suggestions and criticism. The principal coordinated the activities of the group and acted as recorder, and the assistant principal acted as chairman of group meetings.

The principal, invited to the different rooms to observe the progress of the program, had seldom seen so much activity. He

learned much from these visits. Outstanding work was being done in many phases of the school program, and a plan is to be devised by means of which all teachers may have the benefit of learning from each other.

The group involvement in this program seems to have achieved the goal of supervision of instruction: the improvement of the school program by the cooperative efforts of students, teachers, assistant principals, principals, supervisors, and parents.

Has this experiment been generally worth while?

There was consensus here also. It was felt that the objectives as set forth had been attained. This was a pioneer effort, with each individual learning as the program progressed. The staff effort was completely harmonious and enjoyable, even though it meant much work and extra hours of preparation for all. Original ideas had been encouraged and new techniques initiated.

The teachers summed it up. It was, they agreed, "most worth while".

A SURVEY OF THE LANGUAGE ACHIEVEMENT OF ALBERTA SCHOOL CHILDREN

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The Problem

For a number of years the elementary and junior high schools of Alberta have benefited from substantial research in the fields of reading and arithmetic. Less has been done in language. The present study was therefore designed to throw light on the general level of language achievement in Alberta, and on the influence of sex, intelligence and racial origin on linguistic attainment. To permit these ancillary studies it was decided to omit the comparison of attainment among subsamples drawn from the different types of Alberta administrative units which characterized the companion studies in reading and language. As in these studies, however, the samples were chosen from two grades—IV and VII.

Selection of the Sample

To secure a sample which was representative, the province was divided into eight areas on the basis of socio-economic status, racial origin and geographic location. The number of pupils chosen from the ungraded rural, the graded rural and town samples was approximately proportional to the total school population of the area concerned. Graded rural children were randomly chosen from classrooms in villages having a school population of less than 250. To insure more valid sampling only children who actually resided in rural areas were included in the graded rural sample. The ungraded rural sample was similarly drawn from the ungraded or one-room rural schools of the eight areas. The children of the town sample were randomly drawn from centres in which the school population was in excess of 250 but not over 1,000. For the large and small urban samples the cities of Edmonton and Lethbridge, respectively, were randomly selected.

The Testing Instruments

Data provided by reliable testing instruments afford a means of comparing the mean scores of our representative sample with the larger standardization group. Careful utilization of the results can do much to guide the efforts of teachers and educational leaders in the interest of an improved language program. With the specific

purposes of our Alberta survey in mind, it was decided to use the California Short-Form Test of Mental Maturity, Elementary (1950 S-Form), as a measure of intelligence, and the Elementary and Intermediate Forms AA of the California Language Test as measures of achievement in language.

The California Short-Form Test of Mental Maturity provides subtests which yield three mental ages and three intelligence quotients: Language, Non-Language, and Total. Four major factors involved in intelligence are said to be measured by this test, namely: spatial relations, logical reasoning, numerical reasoning, and verbal concepts useful in thinking.

The authors of this test claim that "the major purpose of the test is to provide information on the nature and organization of the abilities of a given pupil in order that that information may be used to guide his learning activities."[1] Cattell states that the test is "exceedingly well designed from the point of view of adaptation to school needs and the convenience of the teacher. All the data regarding consistencies, standardization, and correlation with school progress that one could reasonably demand are clearly presented."[2]

Both the California Language Test, Elementary, Form AA, and the California Language Test, Intermediate, Form AA, are described by the authors as "instruments for accurately measuring student achievement in the fundamental language skills."[3] The Elementary form for use in grades IV, V and VI contains exercises in the mechanics of writing and spelling, and a section on English usage and sentences. Capitalization and punctuation are tested in sentences, fifteen correct responses being possible in each. The Intermediate form for use in grades VII, VIII and IX is similar in structure to the Elementary form. An additional section is included in the Intermediate form, which is designed to test knowledge of parts of speech.

Despite the claims of the authors that the main purpose of the California Language Tests is to aid in the identification of specific strengths and weaknesses of individual pupils, Lannholm expresses the opinion that they "will serve better as measures of general achievement than as diagnostic-analytic instruments."[4] In view of the fact that the Alberta survey was designed to measure achievement in language, there would appear to be no justifiable reason for

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1E. T. Sullivan and others, **Manual for California Short-Term Test of Mental Maturity**, 1950, p. 2.

2R. B. Cattell, "Review of California Test of Mental Maturity," **The Nineteen Forty Mental Measurements Yearbook**, 1940, p. 1194.

3E. W. Tiegs and W. W. Clark, **Manual for California Language Test**, 1950, p. 2.

4G. V. Lannholm, "Review of California Tests," **Fourth Mental Measurements Yearbook**, 1953, p. 149.

criticizing the choice of either the Elementary or Intermediate forms of the California Language Test as suitable testing instruments.

Research Design

Following the administration of the tests, all papers were returned to the Faculty of Education, University of Alberta, where they were marked and the results recorded on specially designed data assembly sheets. From these sheets, frequency distributions were compiled for the mental ability test scores and the language achievement test scores obtained by all grade IV and grade VII pupils participating in the study. The arithmetic means, standard deviations, and standard errors were computed for each sample.

In order to test the significance of mean differences exhibited between samples, the mean differences, standard errors of the differences, and the critical ratios were determined. The critical ratio values were tested against the table of *t*. At the .01 level of confidence the null hypothesis was retained for critical ratios less than 2.58; at the .05 level, for critical ratios less than 1.96.

Comparison of the Total I.Q. scores and Total Language scores for boys and girls was made on the basis of the significance of mean differences. The English and bilingual groups were similarly compared. The product-moment coefficients of correlation were calculated between Total I.Q. and Total Language scores for the grade VII children tested in each sample to determine the degree of relationship existing between intelligence and language achievement. The reliability of each correlation coefficient was tested against the null hypothesis for the significance of its departure from zero.

It should be mentioned that the grade comparisons recorded in this study have been made on a basis of grade placement scores. Intelligence and language achievement, on the other hand, are represented by the obtained raw scores.

Grade Comparisons

The grade levels obtained by the Alberta samples on the California Language Tests serve as a basis for comparing the language achievement of the grade IV and VII pupils tested. The mean achievement on the mechanics of English and grammar, spelling, and total language subtests are presented in Table I.

From an examination of the means in this table, it is evident that on each of the subtests the pupils of both grade IV and grade VII samples achieved a higher language level than their actual grade placement. Two questions are of interest at this point. How much is this measured achievement above their actual grade level, and how much growth in language ability has taken place between grade IV and grade VII?

TABLE I

MEAN ACHIEVEMENT EXPRESSED AS GRADE PLACEMENT OF THE ALBERTA GRADE IV AND VII SAMPLES ON THE CALIFORNIA LANGUAGE SUBTESTS

Subtest	Grade Placement Means	
	Grade IV	Grade VII
Mechanics of English and Grammar	6.1	8.6
Spelling	5.9	9.1
Total Language	6.0	8.9

Table II shows that in the skills measured by the California subtest, the pupils of the grade IV and grade VII samples achieved from seven months to a year and two months beyond their actual grade placement. While this is an encouraging finding it must be noted that its validity depends upon the assumption that the Alberta and American samples are comparable.

Table III indicates the differences between theoretical and actual grade placement of the grade VII group in the language skills measured by the California Language Tests. The range of grade placement scores in the tables of norms for the California Language Tests is from 2.0 to 11.0 for the Elementary level (grades IV, V and VI), and from 3.0 to 14.0 for the Intermediate level (grades VII, VIII, and IX).

TABLE II

COMPARISON BETWEEN ACTUAL GRADE PLACEMENT AND CALIFORNIA LANGUAGE SUBTEST GRADE PLACEMENT OF ALBERTA GRADE IV AND VII SAMPLES

SUBTEST	GRADE PLACEMENT					
	Grade IV			Grade VII		
	Actual	California Mean	Difference	Actual	California Mean	Difference
Mechanics of English and Grammar	4.9	6.1	1.2	7.9	8.6	0.7
Spelling	4.9	5.9	1.0	7.9	9.1	1.2
Total Language	4.9	6.0	1.1	7.9	8.9	1.0

TABLE III

GROWTH IN LANGUAGE ABILITY OF GRADE VII SAMPLE AS MEASURED BY THE CALIFORNIA LANGUAGE SUBTESTS

Subtest	Grade Placement Differences between the Grade IV and Grade VII Samples	
	Actual Difference	Mean Score Difference on California Language Test
Mechanics of English and Grammar	3.0	2.6
Spelling	3.0	3.2
Total Language	3.0	2.9

TABLE IV

RANGE OF GRADE PLACEMENT SCORES OF ALBERTA GRADE IV AND VII SAMPLES ON CALIFORNIA LANGUAGE SUBTESTS

Subtest	Grade IV			Grade VII		
	Lowest	Highest	Range	Lowest	Highest	Range
Mechancis of English and Grammar	2.2	11.2	9.0	3.1	13.0	9.9
Spelling	3.0	9.3	6.3	4.1	13.1	9.0
Total Language	2.7	9.3	6.6	3.8	12.3	8.5

Table IV shows startling grade placement ranges. They seem to indicate the need for language testing and a teaching program suited to the range of ability of pupils in the grade. They also emphasize the necessity of grouping within a grade in terms of ability in language, just as is ordinarily done in reading.

Comparison of Test Norms

After comparison of the level of language achievement of grade IV pupils with that of grade VII pupils in Alberta schools, the achievement of Alberta schools was compared with the published norms of the California Language Test. The percentile levels of grade placement for the Alberta sample of grade IV and VII pupils and the percentile norms of the California Language Tests are given in Tables V and VI.

TABLE V

ALBERTA AND CALIFORNIA NORMS FOR THE ELEMENTARY CALIFORNIA LANGUAGE TEST, GRADE IV

Percentile Norms	Mechanics of English and Grammar		Spelling		Total Language	
	Alberta	California	Alberta	California	Alberta	California
99	8.8	7.8	8.0	7.6	8.1	7.7
95	7.8	6.8-7.7	7.4	6.7-7.5	7.4	6.7-7.6
90	7.4	6.2-6.7	7.0	6.3-6.6	7.2	6.2-6.6
85	7.2	5.9-6.1	6.8	5.9-6.1	6.9	5.9-6.1
80	7.0	5.6-5.8	6.7	5.6-5.8	6.8	5.6-5.8
75	6.8	5.4-5.5	6.5	5.4-5.5	6.7	5.4-5.5
70	6.6	5.2-5.3	6.4	5.2-5.3	6.5	5.2-5.3
60	6.3	5.0-5.1	6.2	5.0-5.1	6.3	5.0-5.1
50	6.1	4.6-4.9	6.0	4.6-4.9	6.1	4.6-4.9
40	5.8	4.4-4.5	5.7	4.4-4.5	5.8	4.4-4.5
30	5.6	4.1-4.3	5.5	4.1-4.3	5.6	4.1-4.3
25	5.4	3.9-4.0	5.3	3.9-4.0	5.5	3.9-4.0
20	5.3	3.7-3.8	5.1	3.7-3.8	5.3	3.7-3.8
15	5.1	3.4-3.6	4.9	3.5-3.6	5.1	3.5-3.6
10	4.9	3.1-3.3	4.7	3.2-3.4	4.9	3.2-3.4
5	4.5	2.6-3.0	4.3	2.9-3.1	4.5	2.8-3.1
1	3.5	2.5—	3.4	2.8—	3.8	2.7—

Note: The actual grade placement of the Alberta sample at the time of testing was 4.9.

The data show that at all the percentile levels given in Table V the Alberta Grade IV sample had a higher level of achievement in Mechanics of English and Grammar that the California standardization sample, while in each of Spelling and Total Language the California scores equalled those of the Alberta sample only at the 95 percentile level. In grade VII the Alberta sample exceeded the normalization sample at every percentile level in Spelling, while it was equalled by the California sample only at the 95th and 99th percentiles in Mechanics of English and Grammar and Total Language.

The findings suggest that the language ability of the pupils included in the Alberta sample compares favorably with the ability of the pupils who comprised the standardizing sample of the California Language Tests.

Comparison of Intelligence Scores

With respect to intelligence, Wellman[5] points out that although within the general population the mean I.Q. does not vary with age, differences appear in the case of children from different types of

[5]Beth L. Wellman, "Child Development—Environmental Factors," **Encyclopedia of Educational Research**, 1952, p. 143.

background. Three seems to be real evidence in the results of the present investigation to support this contention.

A comparison of the mean scores attained by five randomly chosen samples of Alberta children in grades IV and VII on the California Short-Form Test of Mental Maturity, Elementary, 1950, S-Form, is shown in Table VII.

TABLE VI

ALBERTA AND CALIFORNIA NORMS FOR THE INTERMEDIATE CALIFORNIA LANGUAGE TEST, GRADE VII

Percentile Norms	Mechanics of English and Grammar		Spelling		Total Language	
	Alberta	California	Alberta	California	Alberta	California
99	11.4	11.5	12.6	11.4	11.1	11.5
95	10.9	10.4-11.4	11.5	10.3-11.3	10.8	10.3-11.4
90	10.5	9.6-10.3	11.0	9.6-10.2	10.5	9.6-10.2
85	10.1	9.2- 9.5	10.7	9.3- 9.5	10.2	9.3- 9.5
80	9.9	8.9- 9.1	10.5	9.0- 9.2	10.0	9.0- 9.2
75	9.7	8.7- 8.8	10.3	8.7- 8.9	9.8	8.7- 8.9
70	9.5	8.4- 8.6	10.1	8.4- 8.6	9.6	8.4- 8.6
60	9.0	8.0- 8.3	9.7	8.0- 8.3	9.3	8.0- 8.3
50	8.8	7.6- 7.9	9.3	7.6- 7.9	9.1	7.6- 7.9
40	8.3	7.3- 7.5	8.9	7.3- 7.5	8.7	7.3- 7.5
30	7.9	7.0- 7.2	8.4	7.0- 7.2	8.3	7.0- 7.2
25	7.7	6.7- 6.9	8.1	6.7- 6.9	8.1	6.7- 6.9
20	7.4	6.3- 6.6	7.8	6.3- 6.6	7.8	6.3- 6.6
15	7.2	6.0- 6.2	7.5	6.0- 6.2	7.5	6.0- 6.2
10	6.9	5.5- 5.9	7.0	5.4- 5.9	7.1	5.4- 5.9
5	6.2	4.6- 5.4	6.3	4.5- 5.3	6.6	4.6- 5.3
1	5.1	4.5——	4.8	4.4——	5.2	4.5——

Note: The actual grade placement of the Alberta sample at the time of testing was 7.9.

TABLE VII

COMPARISON OF MEAN INTELLIGENCE SCORES OBTAINED BY FIVE SAMPLES OF ALBERTA CHILDREN ON THE CALIFORNIA SHORT-FORM TEST OF MENTAL MATURITY

Sample	N	Total IQ	Language IQ	Non-Language IQ
Large Urban	393	109.51	108.71	110.89
Small Urban	297	109.26	109.71	108.60
Town	424	107.83	107.43	108.08
Graded Rural	406	103.97	102.89	105.96
Ungraded Rural	369	99.55	98.51	101.45

Among large urban, small urban and town samples, the differences between Language I.Q. and Non-Language I.Q. are but slight as compared with those of the graded rural and ungraded rural samples. In apparent agreement with other research findings, it would seem that rural children obtain notably higher non-verbal I.Q. scores than they do verbal I.Q. scores. With urban and town children these differences are less extreme. There appears to be adequate evidence from the results of this study to support the assertion made by Shepard[6] that city children usually surpass country children in verbal-type mental tests.

Correlation Between Intellingence and Language Achievement

Numerous investigations have shown substantial positive correlations between intelligence and academic achievement. In the present study the coefficients of correlations between Total I.Q. scores and Total Language scores for the Alberta samples of grade VII pupils tested range from .54 to .76, as shown in Table VIII.

TABLE VIII

COEFFICIENTS OF CORRELATION BETWEEN TOTAL INTELLIGENCE AND LANGUAGE ACHIEVEMENT

Samples	N	*r*
Large Urban	192	.76
Small Urban	142	.54
Town	212	.69
Graded Rural	183	.62
Ungraded Rural	185	.66

When the reliability of the above coefficients of correlation is tested against the null hypothesis that the computed coefficients do not depart significantly from zero, it is found that in all five cases the correlation coefficients are highly significant at the .01 level of confidence. It is accordingly concluded that a marked relationship exists between tested intelligence and language achievement for the grade VII children who participated in the Alberta survey.

Sex Differences

In a review of the literature dealing with sex differences it has been recognized that girls show a consistenly marked superiority over boys in language achievement, but that no measurable degree of difference is to be found where mental growth and intelligence are concerned.

[6]Eugene L. Shepard, "Measurement of Certain Nonverbal Abilities of Urban and Rural Children," **Journal of Educational Psychology** (September, 1952), p. 461.

Any application of sampling theory is valid only to the degree that the samples are randomly selected. To assure the choice of representative and unbiased samples of both boys and girls in this study, the writers adopted the use of a table of random numbers. A comparison of the mean scores of 200 boys and 200 girls randomly chosen from the entire grade VII sample is shown in Table IX.

TABLE IX

COMPARISON OF MEAN SCORES IN INTELLIGENCE AND LANGUAGE OF GRADE VII BOYS AND GIRLS

Samples	N	Total I.Q.	Total Language
Boys	200	102.90	64.78
Girls	200	103.78	70.83

In order to determine whether or not the obtained mean differences were significant, the critical ratios shown in Table X were computed.

TABLE X

SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES IN INTELLIGENCE AND LANGUAGE FOR GRADE VII BOYS AND GIRLS

Scores	D	SE_D	CR	Level of Significance
Total I.Q.	0.88	1.37	0.64	.....
Total Language	6.05	1.07	5.66	.01

From this evidence it may be concluded that there is no real difference between the mean Total I.Q. scores of the randomly chosen samples of Alberta boys and girls on the California Short-Form Test of Mental Maturity. However, there is a significant superiority for the girls over the boys in terms of scores on the California Intermediate Language Test.

The comparisons made in this study have to do with total intelligence scores. Results obtained on performance scales of intelligence give evidence similar to that provided above. When intelligence tests of a strictly verbal nature are used in comparing sex differences, girls tend to be consistently superior. The verbal features of the California Short-Form Test of Mental Maturity may be suggested as being responsible for the slight, though non-significant, superiority of the girls tested in this survey.

Scholastic achievement scores provide plently of evidence to show that "girls usually excel in oral and silent reading, language

usage, spelling, and handwriting."[7] It should not be too surprising to learn, therefore, that on the California Language Test the girls of Alberta demonstrated a highly significant superiority over the boys at the grade VII level. Table X indicates a difference in mean Total Lanaguage scores of 6.05.

Bilingualism

The effect of a non-English home life upon the language achievement of Alberta pupils constituted a major problem in the present investigation. Strickland observes that "whether learning two languages in the child's early years is more of an asset than a liability in ultimate language development is a question which has been long discussed."[8] Though evidence of the effect of bilingualism on achievement in language is not entirely clear, it does appear true that a bilingual environment tends to handicap progress in school subjects, particularly language.

Before considering the data on bilingualism in the Alberta survey the matter of sample selection had to be settled. For purposes of comparison 200 children who spoke English only were randomly chosen from the 940 boys and girls of the grade VII sample. The bilingual sample included all 131 pupils who declared some language other than English as being the principal language spoken in the home. A comparison of the mean Total I. Q. scores for these two samples is presented in Table XI.

TABLE XI

COMPARISON OF MEAN TOTAL I.Q. SCORES AND TOTAL LANGUAGE SCORES FOR ENGLISH AND BILINGUAL SAMPLES

Samples	N	Total I.Q.	Total Language
English	200	105.10	68.78
Bilingual	131	95.44	62.84

In order to determine whether or not the mean differences tabulated were significant, the critical ratios were calculated as shown in Table XII. These values are found to be highly significant at the .01 level of confidence. From the results of this study there seems to be some evidence to support the conclusion that the linguistic advantage enjoyed by English monoglot pupils may be an important factor in their superiority over bilingual children on the California Short-Form Test of Mental Maturity. Not too much

[7]F. S. Freemann and C. C. Miles, "Sex Differences", **Encyclopedia of Educational Research**, 1952, p. 1206.

[8]Ruth C. Strickland, **The Language Arts in the Elementary School**, p. 25.

In the validating procedure, the 61 students interviewed retained the top four influences presented in Table IV, but in this order: teacher, mother, father, principal. The interviews further confirmed "public reaction to the six-week course" as the least effective "influence for", followed by "school counselor", "community attitude to teaching", "relatives" and "several friends".

It would appear that while the questionnaire may have slightly distorted the rank order of influences, the results presented in Table IV are generally valid.

What influences a friend against entering teaching?

The questionnaire asked the students to list the influences which they thought had caused friends or acquaintances, who might have made good teachers, to decide against the profession. The tabulation and classification of these influences are presented in Table V.

TABLE V

INFLUENCES AGAINST A FRIEND ENTERING TEACHING

BACHELOR OF EDUCATION (124 Students)		JUNIOR ELEMENTARY (352 Students)	
Reason	Number	Reason	Number
1. Low salary	38	1. Low salary	112
2. Adverse public opinion	25	2. Adverse public opinion	53
3. Discouraged by friends, parents or teachers	28	3. Discouraged by friends, parents or teachers	43
4. Financial	8	4. Financial	39

In Table V the category of *low salary* includes such statements as "poor pay", "not enough money for a man", "better opportunities and wages in other fields". *Adverse public opinion* covers "teaching is a thankless job", "teachers are not appreciated", "the profession is losing prestige", criticism outside of the classroom is increasing", "education is looked down on", "standards are too low", "teachers are objects of ridicule" and similar statements. *Discouraged by friends, parents or teachers* includes the following: "friends talked him into doing something else", "parents disapproved of his taking teaching", "he witnessed the failure of some teacher". The *financial* category indicates ideas like "not enough money to take the course", "he had to work right away to earn money".

Interviews with the 61 students produced validation similar to that following Table II.

4. On the California Short-Form Test of Mental Maturity, the urban and town school children of Alberta demonstrate a significant superiority in intelligence over children from graded rural and ungraded rural schools. This fact may be attributable, in part, to the verbal components of the intelligence test.

5. With the exception of the small urban sample, Alberta children are found to reach a higher level of attainment on the Non-Language section of the California Short-Form Test of Mental Maturity than on the Language section.

6. In comparison with the standardization group, the school children of Alberta appear to demonstrate a significant superiority in intelligence test scores.

7. Substantial positive correlations are found to exist between intelligence and language achievement, as measured by the California Short-Form Test of Mental Maturity and the California Language Test, Intermediate, Form AA. The coefficient of correlation for the combined Alberta samples of grade VII children is .66.

8. On the California Short-Form Test of Mental Maturity, no significant sex differences in intelligence are found to exist for Alberta children.

9. The grade VII girls of Alberta demonstrate a highly significant superiority over the boys on the California Language Test, Intermediate, Form AA.

10. Children from homes in which English is the only spoken language obtain substantially higher scores on the California Short-Form Test of Mental Maturity than do children from bilingual homes. This again may be attributable, in part at least, to the emphasis on language of the intelligence test.

11. When the English and bilingual groups are compared for language achievement on the California Language Test, Intermediate, Form AA, the difference is significantly in favor of the English group.

12. Data derived from this investigation provide adequate evidence to suggest that children from Alberta homes in which English is spoken attain higher scores than do bilingual children on tests of intelligence and language achievement.

Implications

1. Despite the high language achievement levels attained by grade IV and VII pupils in Alberta schools, there appears to be reason for concern over the slower increment of learning between grades IV and VII as compared with grades I to IV. Only in spelling do the test results remain consistent, implying that greater emphasis

be placed on the mastery of Mechanics of English and Grammar in Division II.

2. The wide range of grade placement so apparent in this study seems to focus attention upon a teaching problem which may be common to every classroom. Teachers might well direct more attention to providing for the needs indicated by the extreme range of language achievement in Alberta schools.

3. Due to the significantly high correlation between mental maturity and language achievement, caution should be exercised in the degree of dependency placed upon verbal intelligence scores.

4. In the determination of the total potential abilities of bilingual children, one is forced to conclude that verbal tests of mental measurement appear to be inadequate. This implication does not encourage any suggestion of the discontinuance of the use of verbal tests, but does imply that for a more accurate evaluation of intellectual abilities non-verbal or performance tests should also be employed in testing bilingual students.

5. Rural children appear to suffer in comparison with urban and town children from a lack of verbal and linguistic background. Obviously a language program in rural areas should be designed to provide for the linguistic needs and deficiencies of rural pupils.

6. Children of foreign parentage appear to suffer a very definite handicap in English. Certainly the findings of this study point to a need of bilingual students for special assistance in the mastery of the basic English language skills.

BIBLIOGRAPHY

Alberta Department of Education. *Curriculum Guide for Social Studies—Language, Alberta Junior High School.* Edmonton, Queen's Printer, 1953.

Buros, Oscar., ed. *The Fourth Mental Measurements Yearbook.* New Jersey, Gryphon Books Ltd., 1953.

Buros, Oscar K., ed. *The Nineteen Forty Mental Measurements Yearbook.* New Jersey, Rutgers University Press, 1940.

Chalmers, J. W. *A Study of the Effective and Recognized Vocabularies of Alberta Students in Grades VII to XII.* M. A. Dissertation, University of Alberta, 1935.

Cronbach, Lee J. *Essentials of Psychological Testing.* New York, Harper and Brothers, 1949.

Dawson, Mildred A. *Teaching Language in the Schools.* New Work, World Book Company, 1951.

Garrett, Henry E. *Statistics in Psychology and Education.* New York, Longmans, Green and Company, 1947.

Gates, A. I. and others. *Educational Psychology.* New York, The Macmillan Company, 1950.

Gavinchuk, M. N. *A Comparative Study of the Relation of Academic Achievement and Certain Intelligence Tests at the Junior High School Level.* M.Ed. Dissertation, University of Alberta, 1954.

Gibeault, J. L. *The Effect of Instruction in French upon the Mastery of the English Language in English-French Schools of the St. Paul Inspectorate.* M.A. Dissertation, University of Alberta, 1939.

Hinds, James H. "A Comparison of the Brightness of Country and City High School Children." *The Journal of Educational Research V* (February, 1922), pp. 120-124.

Hobbs, Nicholas. "Child Development and Language Learning." *School and Society* LXXVIII (July, 1953), pp. 17-21.

Jordan, A. M. "Sex Differences in Mental Traits." *The High School Journal XX* (November, 1937), pp. 254-261.

Lindquist, E. F. *Statistical Analysis in Educational Research.* Boston, Houghton Mifflin Co., 1940.

Monroe, Walter S., ed. *The Encyclopedia of Educational Research.* New York, The Macmillan Company, 1952.

National Council of Teachers of English. *The English Language Arts.* New York, Appleton-Century-Crofts Inc., 1952.

National Society for th eStudy of English. *Teaching Language in the Elementary School* (43rd Yearbook, Part II). Chicago, University Press, 1944.

Olson, Willard C. *Child Development.* Boston, D. C. Heath and Company, 1949.

Robinson, C. H. *A Study of the Written Language Errors of 1238 Pupils of Ukranian Origin.* B.Ed. Dissertation, University of Alberta, 1934.

Saer, D. J. "The Effect of Bilingualism on Intelligence." *The British Journal of Psychology* XIV (1923), pp. 35-38.

Shepard, Engene L. "Measurement of Certain Nonverbal Abilities of Urban and Rural Children." *The Journal of Educational Psychology* XXXIII (September, 1942), pp. 458-462.

Smith, Frank. "Bilingualism and Mental Development." *The British Journal of Psychology* XIII (1923), pp. 271-282.

Strickland, Ruth C. "The Language and Mental Development of Children." *Bulletin of the School of Education, Indiana University* XXIII (March, 1947), pp. 5-29.

Strickland, Ruth C. *The Language Arts in the Elementary School.* Boston, D. C. Heath and Company, 1951.

Stroud, J. B. and Lindquist, E. F. "Sex Difference in the Elementary and Secondary Schools." *The Journal of Educational Psychology* XXXIII (December, 1942), pp. 657-666.

Sullivan, E. T. and others. *Manual for California Language Test.* Los *Polish Students in Grades IX, X, XI, and XII of Alberta Schools.* M.Ed. Dissertation, University of Alberta, 1946.

Sullivan, E. T. and others *Manual for California Short-Form Test of Mental Maturity.* Los Angeles, California Test Bureau, 1950.

Tiegs, E. W. and Clark, W. W. *Manual for California Language Test.* Los Angeles, California Test Bureau, 1950

Urban, Wilbur, M. *Language and Reality.* New York, The Macmillian Company, 1939.

Wahlquist, J. T. "Intelligence of Urban and Rural Children." *The Elementary School Journal* XXVII (May, 1927), pp. 682-684

Walker, Helen M. *Elementary Statistical Method.* New York, Henry Holt and Company, 1953.

Watts, A. F. *The Language and Mental Development of Children.* London, George G. Harrup and Company Ltd., 1944.

Appendix

A COMPOSITION SCALE FOR ALBERTA GRADE FOUR AND GRADE SEVEN STUDENTS

The following pieces of student writing were selected from a representative sample of Alberta grade IV and grade VII students, as explained in the language study on pages 5-18 of this *Journal.* They were evaluated by juries of experienced teachers in the Faculty of Education, University of Alberta, on the basis of the quality of communication (selection, organization, and presentation of ideas). It must be emphasized that the evaluation is for *quality* alone; separate ratings were made for formal correctness and mechanics.

The items, grouped under scale value headings according to the jury's evaluation of each, constitute a "composition scale." 5 indicates a composition of the highest value; 1, a composition of the lowest value. The scale is, of course, purely relative: it offers no secure basis for rating student writing in a given classroom.

Grade IV (Fun After Four)

Scale value 5 (sample 1)

I can hardly wait till after school, for I'm making a magic ink kit. First of all in making the kit you line the kit with cloth. The next thing you are to do is to put some lemon juice in a bottle and put it in the kit, also three or four toothpicks. Then you put a piece of tape over top of them, leave them for awhile then try the magic. You take a toothpick and put it in the bottle, then take it out. Get a piece of paper, write a message in a cold place, then heat it with an iron and you can read the message. I hope it works.

Scale value 5 (sample 2)

I have fun in many ways. But I will tell you of one experiance I had.

One day last summer my girl friend and I decided to go bike riding. My girl friend said she knew of a wonderful playhouse.

So we took our bikes and went away. We finally came to some tall grass. In the middle was a big fallen tree. So my girl friend and I crawled in. All of a sudden my girl friend screamed SKUNKS! she screamed. We rushed out got our bikes and rode away the skunks following behind.

You can imagine what we did when we got home.

YES! We took a bath and buried our clothes.

We have never gone there since that time and we never mean to either.

Scale value 5 (sample 3)

Bob and I ran home as fast as we could after school. We were going to make a big red and yellow kite with a picture of a clown on it. Yesterday Bob's dad gave us some light wood for the framework of the kite. We were going to make the kite thirty-six inches high and thirty inches wide. Mr. Smith gave us one-hundred feet of string to fly the kite with. We worked hard and soon had it finished. We took it outside to see if it could fly. We

had flown it for thirty minutes when mother said we had better come in for supper. In we went after having lots of fun since four o'clock.

Scale value 5 (sample 4)

Today I can hardly wait to get home. I am going to build, a birdhouse with my brother. We are going to make it a shape like this. [Sketch]

It is kind of late to make a birdhouse now. That is why I am in such a hurry. I am going to make two small holes, for a small bird to get in. I don't want that a blackbird, or any other big birds to get in, and take the eggs away.

We are going to paint the roof red, and the walls white. It is going to be a beautiful home for the bird that will live in it.

Scale value 4 (sample 1)

When I come home from school I like to go down to the creek and catch minoes. Sometimes we play in the hay stacks. We go to the farm After school sometimes and I love to gather eggs, mild the cow, feed the pigs, and ride horse back. We play ball there to. Thats why I like to get out of school at four o'clock.

Scale value 4 (sample 2)

Oh how happy I am when school is out! Because I like to read brightly color books that have the best stories with other boys and girls, that play in the hot, bright, sun, in the bright, beautiful blue sky. Afer school I like to play with my doll Sharon. I to play her bright, shiny, gold hair and put different dress on Sharon. That is why I like to go home after school.

Scale value 4 (sample 3)

After school I usualy go to a lesson. But when I don't, I like to play skipping, baceball and catch with my girlfriends. Sometimes I go for a bike ride. Many times I sit out on the doorstep and sketch the clinic across the street. Are garage has a flat roof, and many a time I go up and read. Sometimes I amuse myself in the house with, knitting, sewing and reading. Once in a while I go to a birthday party or a movie. Now and then I go shopping with my mother. "Do you have as much after school as I do?"

Scale value 4 (sample 4)

When I come home from school and my chores are done I go hunting crows with my 22. Dad gives me five cents for every crow I shoot. Some days I don't see a crow but some days I shoot two or three of them. I am saving my money to buy a base ball glove and bat.

Scale value 3 (sample 1)

In winter when I come home from school I put on my scats and go play hockey with Melvin or tag on the ice too. When Melvin goes in the goalie I try to get it in. If 1 do it counts one score for me. Whan I go in the goalie and he gets it in it counts one score for him. We don't have to go far when we want to skate. When we go after supper we take the lanturn and hang it on a big long post so we can see what we are doing. Sometimes we take a sligh on the ice and give each other rides. We have lots of fun just about every day in winter.

Scale value 3 (sample 2)

I'm glad that school is over because I can go build my cart and put the wheels on and the seats. After I finished I will go find some boys and go down the street in my cart and have fun. We will go down the street and then I will let some of my friends have a ride in my cart.

Then after I have to go in and eat my supper. After I will come outside and play with my cart. Then after I have to go home and go to bed and sleep.

Scale value 3 (sample 3)

After school I play with Helen and Billy. We play doubledutch and hop-scotch. So Helen, Billy, and I play double-dutch. In double-dutch, last night, I skipped up to eight hundred. Helen and Billy were so tired, that they had to drop the ropes.

Then after we finished playing double-dutch, we played hop-scotch. Just helen and I were playing. I had all the squares filled with stars. Helen was very mad, because she had only one star.

Scale value 3 (sample 4)

When I get home from school. I get my friend and we get our bikes. We play motercycles and try to climb up a little hill. When we fall, we ride our biks to the fence. We get a little piece of pipe and get the hose. We put the pipe on the sheel and turn on the hose. We pretend that the water is gas. Then we go try to climb the little hill.

Other days we play calvery. We round up some boys and play. A little friend of min has an Indian tent and a flag that we play with. We dig little hols in the ground and put bushes over the hols so that the Indians wont know that there are traps that gaurd our fort.

Scale value 3 (sample 5)

I go to play war with Eric and Fred. Eric has built a wooden tank in which we play. We get some more friends to play war. I like playing war because we hide in the grass and all kinds of places. We take sticks for our gun. In the tank Eric has a pipe for a gun. After that we have to go hom and eat.

Scale value 2 (sample 1)

When I get home, after four I play baseball or football in the summer.

In the winter I go in the house, and read or listen to the radio, sometimes I go outside and play, snow balls or go skiing.

Scale value 2 (sample 2)

I have a lots of fun playing ball after school. I like it because you run arought and jump up high for the ball and have a lots of fun batting the ball too. Sometimes I bat the ball it goes so far them I have made a homerace. Sometimes I like to picthes I picthes usually so high that it goes so far I have to run to get it. After supper I play the same game too.

Scale value 2 (sample 3)

I like to play on the lumber. I like to run after the rabbit I also like to fix my playhouse and I like to play with the robbins eggs I like to look at the gadern. arlene and byand likes to count seven tings in the gadern that look like vegebels and I tell them that is not vegebels and we have loads of fun.

Scale value 2 (sample 4)

After four I go and get the cow and feel the pigs. I help my father driveing the tactor. After I have to go and milk the cow and put them in the pasture. After I am finish milk the cow I go and play ball. Sometime I and my brother we play pith. When we are trieding playing ball we have to go and cloths the sheep and go and look for eggs. After we have to go and sleep to go to school nexts day.

Scale value 1 (sample 1)

I like rideing horse and I milk the cows and l like to play with violet at home and I held on the bram and beat the chicks and feet the bloc and I get . . .

Scale value 1 (sample 2)

I play ball boy catch ball.
I play cowboy took a bus.
I took boy a bons come rat bat man lossed.
I jump bus home—door.

Scale value 1 (sample 3)

We are playing ball and then. We are playing School and then we are. going home.

Scale value 1 (sample 4)

I like to make an airplaine so to make it go up in the air. So it could go up in the air a while.

I like to make a kite and have a long string. So it would stay up in the air. kites.

Grade VII (Why My Hobby Is Important)

Scale value 5 (sample 1)

My hobby is collecting pictures of dogs. I get great enjoyment from collecting pictures of dogs because I like these animals very much. The pictures I collect are pasted in a large scrap-book.

Dogs are fine animals and good pictures of dogs can make a fine scrap-book. It is fun to look through old magazines to find pictures you like. This way you can learn different breeds of dogs and if you take time you can learn to recognize different breeds on sight. You can learn the ancestors of common dogs. You can also learn something about dogs you have never seen. In my scrap-book are pictures of my own dog taken every year. This way I can tell how he has grown and how he has changed. I would like to collect pictures of my friends dogs and compare them from year to year. I think collecting pictures of dogs is a very interesting hobby.

Scale value 5 (sample 2)

My hobby is playing or maybe I should say trying to play the piano and the clarinet. I am taking piano lessons but my father is teaching me to play the clarinet. I consider playing the piano important because I want to be able to play for parties and for my own pleasure. My hobby is important to my grandmother and grandfather because they want me to play for the church when I am older. My father wants me to play the clarinet so I can play duets with him. He also likes me to accompany him on the piano while he is playing his clarinet. My being able to play the piano comes in handy because now I pianist for the Junior White Cross, a church organization. When my grandmother and grandfather come over we all gather around the piano and I play while the rest sing. Even though my teacher despairs when I strike a wrong key and my sister becomes angry with me for practicing too much, I am still trying to become better.

Scale value 5 (sample 3)

How many of you collect stamps? I do, and here are the reasons why.

First of all, and most important, stamp collecting is fun. Many people can not see how it is fun. Often I am asked why I "waste" so much time over a "measly" thing like stamps, when I could be doing something useful, like embroidering, or knitting.

Stamp collecting is also interesting. Some stamps are odd-shaped, some are beautiful. Some are even worth fortunes. These stamps, of course, are very rare.

When I told my dad that stamp collecting is educating, he asked me. "How?" When you are stamp collecting, you learn about new, existing places, such as Nicaragua, and Monaco. How many of you have ever heard of Angola, Vatican City, or the Republic of Indosena?

Many important people, such as King George VI, Prince Philip, King Farouk of Egypt, and President Roosevelt, collect, or collected stamps. In fact, many kings of many different countries collect stamps. These "Royal Collections" are often on display to the public.

Another good point about stamp collecting is that it is very easy to start. You can obtain many different stamps from banks, or large business firms. It is also helpful to have a "pen pal" in some foreign land. Maybe your grandparents have a trunkful of old letters, or post cards you may go through.

So, kids, before choosing a hobby, think about stamp collecting. It is one of the most interesting hobbies in the world today.

Scales value 4 (sample 1)

One afternoon while we were on our holidays, I heard a Pipe Band. I immediately wanted to play in it. But seeing as how I didn't live there I couldn't. When we got home I started right in taking lessons. I am now playing in the "Lethbridge Jr Bonnie Doon Pipe Band." While playing in the band or on my own I get much enjoyment out of doing it. When I am alone or on holidays and have nothing to do I play my pipes to fill in time In playing on my own or with the band other people enjoy listening to you which encourages a person. Being the oldest member in the band is lots of fun when the band is asked to play anywhere because it gives others enjoyment and you also enjoy yourself. The most fun next to playing the pipes is the wearing of the kilt uniform. That really makes you feel good. My Dad, comining from Scotland, doesn't think I could have picked a better hobby.

Scale value 4 (sample 2)

My hobby is building model airplanes. It is a fine pastime for rainy and winter weather.

I think my hobby is important because it gives practice in putting and fitting things together in the right order. It helps you in learning the different parts of a plane and how well you can put it together. It gives you practice in reading and studing and working things out for yourself. After you have learned how to build planes well you can build other models such as: boats, race cars, and many other things. When you see stories in magazines and books it makes you want to read them and learn more about them. After you learn more about planes and other models you can buy motors for them. When you learn enough about them you can help other children just learning.

Scale value 4 (sample 3)

Skating, being my chief hobby, gives me the amount of exercise and fresh air to keep healthy. While doing this, much enjoyment is added to life. The experience I get every year from being in the ice carnival here is very good and will help me in the future, for it gives me more courage to do things outside of skating. Skating also comes in handy at times, for when I want to go with some friends skating, I am able to do it properly and enjoy it more. I have been skating for four years now and every year I seem to enjoy it more. Now I am more experienced with it and am able to teach other children. The audience, when at our carnival are athousiased for they enjoy watching it as much as we enjoy putting it on. Skating is my best achievement and it brings more joy to every one who does it.

Scale value 4 (sample 4)

I figure my hobby is important because it gets me money for things which I figure are important. Right now I am saving up to go to college. My hobby is raising flowers and vegetables. In past years I have won quite a few prizes from the annual "Horticultural Society's" flower and vegetable show. I have also entered the school garden competition for the second year. This year I am in the advanced flower class because I won a prize last year. My hobby also gets me valuable advice on flowers. I learn quite

a bit about gardening from some of the older people who help with the horticultural display every year. My hobby also teaches me how to take care of our garden every year. Gardening gets me out in the fresh air too because I like to read and would otherwise spend all my time reading. I collect pictures of the different kinds of flowers. I hope to have enough money to go to college by time I'm finished Grade twelve. I also hope this story will tell you why I think my hobby is important.

Scale value 4 (sample 5)

I have a wanderful hobby which is sewing. I became interested in sewing two years ago when one of my coussin came to visit me. She stayed at my place and we had a old sewing machine which we never used. She told us that she could sew (I) and wanted to try to make herself a sun dress. So she got what she needed and made wanderful dress so I told her to teach me how and she did. I learn to make a few little thing and before she left I got a pattern and made myself a dress too it wasn't to bad so after she left I made other things.

Now I can do practically any thing like dresses, slips, jeans blouses, etc. I save my mother and father some money. Oh! I even tryed to do a coat which I didn't sucseed in doing it. I can follow a pattern pretty well.

Later I intend to go to school that teachs how to sew and after I want to be a dresses maker in a big factory. My mother thinks its a wanderful career and I think it is too. I hope I don't change my mind.

Scale value 3 (sample 1)

My hobby is sewing. It is a very useful and lots of fun. Sewing is not very expensive and a very good passtime. If you don't like to follow patterens you can make up your own.

When I started to take up sewing it sounded hard, but now I think its fun. I first started on a apron when I was taking Home. Ec. This is what started my liking for sewing. I enjoyed making my apron so much that I dicided I would like to make other things. After awhile I made myself a blouse. Soon I began sewing quite a few clothes for myself. I later started making quite a few things for other people. It wasn't half as expensive as buying clothes up town.

Many young girls started to take up sewing too because they wanted to save some of their money for other things. I suggest that you, too, will start taking up sewing. I am sure many people will enjoy your work if you do it your best.

Scale value 3 (sample 2)

My hobby is saving stamps and I like it very much because I can find the places on a map. When I have spare time I work on my hobby from After school until supper time.

My mother does more work when I'm working on my hobby. When I get stuck I call my mother and she helps me find the place. When I find the place I put the stamp in my album.

Some stamps have queer names and have funny pictures on them which I can't pronounce them. Some which I can pronounce I look the page up in my album and paste them in. Sometimes I find some old stamps which there is none in my album so I keep them just the same. Once in a time there are a package of free stamps in the papers so I send for them. I like to work alone on my hobby .

Scale value 3 (sample 3)

My Hobby is building model airplanes.

I like my hobby because it helps fill in my spare time and it is a lot of fun to try to build a difficult model.

I would sooner build a hard plane than a easy one because it takes longer and is more exciting.

The part I like best is puting the paper on and paintıng it. I like putting the paper on because you have to put the paper on just right or you don't have enough. I like making large models because a person has more room to work on the plane when the wire that moves the tale flaps break. I haven't tried building a jet model yet.

Scale value 3 (sample 4)

My hobby is collecting model planes, pictures of the army, navy and the air force. As soon as a new invention of war is out I try to get its picture or a model of it. In my room, I have many model planes.

My reason for liking this hobby is because my ambition is to become an air pilot. I like to handle guns and firering arms, I also like to read war books and adventures.

Another reason is because my brother in law and our neighbor went to World War II and tell many of their interesting tales of themselves and their buddies.

Another reason is because I like to travel and I also like speed and want to travel when I grow up to be a man.

I like my hobby and like to look up new pictures, build model planes, pictures of new guns, jets, boats, carriers ,tanks and other fire arms. Every day there are new inventions, suits are being worked on now. Last month they invented a new bullet proof vest weighing only two pounds.

Scale value 3 (sample 5)

My hobby is collecting tadpoles, flowers and many kinds of leaves.

In the spring I usually get tadpole eggs and put them in a jar, with water from the river, as they actually become frogs, I put them back in the river.

I think its quite a nice hobby and an important hobby, I also think it kinda teaches me not to harm little animals.

I collect flowers and many kinds of leaves also.

When there are many nice flowers and leaves I usually gather them and press them in books.

When I'm sure they're well pressed, I put them in a little box.

Some time when there are very few flowers, I plant some, and press them when they are whithered.

I think its fun and I also think its a very good hobby.

Scale value 3 (sample 6)

Many different people have important things about their hobbies but I have mine about stamp collecting.

I get enjoyement out of my stamp collecting because I can get together with other children to trade stamps and have stamp hunts.

The classification is one of the nicest things I think because you always go to different countries in your album and find many different kinds of stamps.

Sometimes when you find a stamp of which you are not sure of the value, it is best to look it up and sometime the stamp may be worth a fortune.

You learn alot about the different countries when you take up stamp collecting. Another thing of what you learn is the value of stamps and you learn about history.

I like the approval companies where you buy stamps when the companies send them but I don't buy them very often.

I guess other children like other hobbies and think they are very important but I will always like stamp collecting.

Scale value 2 (sample 1)

My hobbie is to ride a horse, and liking it very much.

One fine Sunday morning I decided to go to my cousins place to ride a horse. Then when I finenly came there my cousin was reading a book. When she had finished reading, we took an old pale, full of oats and caught the horse. While we were riding up and down the road, I put my feet by her stomach, since she didn't like it she threw us both off. The second time we rode her my cousin kicked her and she began to run away, while she was runing we both fell off. Nothing didn't happen to my cousin but I had broken my hand. I wore a cast on for six weeks, and sure didn't enjoy it. After a month I rode the same horse and nothing didn't happen to me. I still do enjoy riding a horse, and will ride one.

Scale value 2 (sample 2)

My hobby is collecting different kinds of bird eggs. What I like best is going on a hike and collecting birds eggs. One day we went on a hike about three miles from home and when we found a good bush we stopped and went in looking for eggs. When we saw a nest and when we got a closer look it looked like two nests. When we got there we saw a porkepine eating the eggs out of the nest. So we tried to get the porkepine out of the tree so we could get the eggs. Each one of us wanted to get the eggs so we all got big long poles to get the porkepine down. We tried and we tried til one of the poles hit the porkepine and knocked him off the branch and on his way down he caught a branch and climbed back up. After that we were so tired we went out to the highway and ate our lunch. On our way home we stopped at a bush and killed a few mice and then we went home.

Scale value 2 (sample 3)

I got a calf from my dad because when the calf was born it did not now how to suck so I would stick the tit in the calfes mouth and then it learned to suck itself so then in the evening I told my dad that I a going to keep it cause I learned it to suck so he said I could have it.

Now it is one year and a half old and I am going to keep if for a cow an let it have cavies if it will have a bull I will sell it and by a heifer and keep on raising cattle for my self and when I will grow up I will have a big heard of cattle.

It is Important because with cattlee you can make your living and make money. It is Important because when I a going to grow older I a planning to be a farmer because I am no very good in school work so I won't beable to learned to be nothing that you need to do lot reading cause I am not could in reading. I might take my calf to a show and I might win a price if I will be luck enough but If I won't win I won't win.

Scale value 2 (sample 4)

My hobby is ridding horses. I like this hobby, and I think it's quit important to me. Because I always have loved this animal.
This have been my hobby for many years. I find it very interesting too. it isn't jus about that pertigular horse I ride. or have, but about his family. from years back. Probably his grandfather was a rase horse. than I would mabie be able to find something about that horse that I think is interesting. I am not just interested in that or the horse famely, but it is interesting to know about its history.
I have many books about horses, and many of them I have made.
I have told other poeple about my hobby. They have tryed the same, and some of them find it very interesting too. it probably is an expensife hobby but it is fun.

Scale value 1 (sample 1)

Machines may give you and education and you may even get to know many thing about machines You can learn different things about cars, trucks and so on. If you have the money you can buy little machines and play with them. If your are young when you start to play with machines after when you are about 25 years old you may know a little about machines. It is fun to have a hobby and fool around with things

Scale value 1 (sample 2)

My hobby is gitting differnt kinds of horses. I like horses because they learn fast. You can learn them to lay down and many other things. They can be used for chasing cattle and other horses. You can sill a good horse for about Sevently-five dollars and you can raise them and make money to if they are fast. I started with horses about four years ago and like it very much. Some of them are harder to ride then others.

Scale value 1 (sample 3)

My Hobby is About a graden club. When we went a graden club When you have a graden club you have to clear and pull all the weeds. When it is small you get to water it third three time a day. But when there is a freeze you get to cover it up if it freeze you wouldn't have a graden club. Then in fall time you get to cook and put then in jars. like carrant beet peas beans. From flours are for winter. You put then in a can or a box that they wouldn't freeze. we cut out picture for the graden club and make a scape book, we have a meeting every two weaks. The graden club girls there are 8 girl that went the graden club, are Nattie Dora Tilly Mary annie we get a first priza for it. I like it very much for it.

Editorial

The continuing shortage of teachers in Alberta and elsewhere warrants stern attention to this problem by research groups. Obviously there are two kinds of solution: attracting into our teacher-education institutions the greatest possible number of qualified candidates, and retaining as many as possible in the schools once they have been prepared. These are, of course, complementary rather than alternative. Our present issue reports in a preliminary way upon both of them.

The bearing of the Ackroyd-Roberts study upon the problem is indirect. Setting out to determine for a given year (1949) the post-school occupations of Alberta high-school graduates with university entrance standards, the investigators found that of those who came to the University the Faculty of Education enrolled slightly more than one-quarter, and almost half of the women. These figures suggest a question about the proportion of university students which the Faculty of Education may reasonably hope to attract in competition with other faculties. They suggest the further question of how many and what kind of high school graduates with university matriculation can or should be drawn to the university in competition with industry, the trades, and other occupations. The writers recommend an improved scheme of public relations, together with various kinds of financial assistance.

Murray's study, "An Investigation of the Annoyances and Frustrations which Cause Alberta Teachers to Quit Teaching," bears directly upon the problem of retention. Not all teachers, of course, leave teaching because of "annoyances and frustrations": for many women it is but a random step toward marriage, while for men it is often a planned step toward a preferred career. It should further be recognized that no significant job is likely to be without annoyances and frustrations—least of all teaching. What the study makes clear, however, is the nature of the main dissatisfactions. Some ten of these are identified: notably poor living and working conditions, excessive enrolments, inadequate salaries, low prestige, and social restrictions.

The important practical question that arises from Murray's study is whether or not these dissatisfactions, individually or in sum, are *necessary* or preventable. What can be done, or what *more* can be done about their identifiable causes? Which, if any, are basic and which are merely correlative? In short, what most needs to be done to staff our classrooms with good teachers?

To the latter question Murray's respondents replied overwhelmingly that the salaries of teachers must be raised and that the minimum qualifications for teachers must be improved. This is by no means a new answer. Those charged with the responsibility of staffing our schools may well attend to its reiteration by a group well qualified to speak.

A STUDY OF THE SELF-CONCEPT AND IDEAL-CONCEPT IN ADOLESCENCE

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Introduction

Current psychological literature shows a renewed concern with the *self* as a legitimate subject for psychological study. By the *self* is meant the "subjective self as it is perceived, conceived, valued and responded to by the individual himself."[1] The importance of the self in educational psychology is clear when one considers the influence of the school upon the formation, and to some extent the fixation, of attitudes, interests, aspirations, values and ideals. All of these are implicit in the individual's *self-concept*—the person he actually conceives himself to be, or in his *ideal-concept*—the person he would most like to be. Jersild points to the importance of the study of the self by educators: "There is a need of staggering magnitude for doing something in our educational program to help children and youth acquire realistic attitudes of self-acceptance."[2] Lecky has commented on the need for change in the self-concept if growth is to take place during the educative process. This author was given a striking illustration of the effects of resistance to change by an intelligent student who is deficient in spelling.

> The resistance arises from the fact that at some time in the past the suggestion that he was a poor speller was accepted and incorporated into his definition of himself, and is now an integral part of his total personality. This dificulty is thus explained as a special instance of the general principle that a person can only be true to himself. If he defined himself as a poor speller, the misspelling of a certain proportion of words which he uses becomes a moral issue. He misspells words for the same reason that he refuses to become a thief. That is, he must behave in a manner consistent with his idea of himself.[3]

In the allied field of Vocational Guidance, Super has written that "in choosing an occupation one is, in effect, choosing a means of implementing a self-concept."[4]

The primary aim of the present investigation was to develop a *forced-sort* device for sampling the self-concept and the ideal-concept, and, using this instrument, to study the relation between these variables for a group of adolescent students. Secondary aims included the investigation of sex differences in the *self-ideal*

1Percival W. Symonds, **The Ego and the Self,** p. vi.
2Arthur T. Jersild, **In Search of Self,** p. 5.
3Prescott Lecky, **Self-Consistency,** p. 140.
4Donald E. Super, "Vocational Adjustment: Implementing a Self-Concept," **Occupations** (1951), p. 92.

relationship, and the study of the concern and dissatisfaction associated with various areas of the *perceived self* in adolescence.

Sampling the Self-Concept and the Ideal-Concept

"Q-technique" was used to estimate the degree of relatedness between the self-concept and the ideal-concept for a group of adolescents. This was accomplished by having each of the subjects sort a set of 51 self-descriptive statements into eleven categories ranging from "Most True" to "Least True." The steps in the procedure were roughly as follows:

1. Each subject was given a set of 51 cards on which were printed self-descriptive statements such as
   "I have a hard time solving problems."
   "I have a good sense of humour."
2. Each subject was given a distribution chart consisting of 51 rectangles large enough to fit the cards. The rectangles were arranged into eleven columns numbered from *0* on the left to *10* on the right as follows:

Column Number	0	1	2	3	4	5	6	7	8	9	10
Number of Rectangles	1	2	4	6	8	9	8	6	4	2	1

   Immediately above Column 0 was printed "Least True", and above Column 10 was printed "Most True."
3. The subjects were instructed to place the statement which was least true of themselves in Column 0, and the statement which was most true in Column 10. The remaining statements were to be arranged so that the greater the truth of a statement the further it was placed to the right, and the less its truth the further it was placed toward the left, with only one card in each rectangle.
4. After all the statements had been positioned on the chart, the subjects were instructed to record the identification numbers of the statements on the chart spaces underneath.

The procedure was carried out twice. On the first sort, the subject judged the truth of each statement relative to his actual conception of himself. On the second sort, the truth of each statement was judged relative to the subject's ideal-concept: "the person he would most like to be." The number of statements permissible in any given *truth category* (column) was rigidly set to make the frequencies of statements approximate, as closely as possible, the normal frequency distribution. By forcing the distribution of statements to be approximately normal, the necessity for an assumption about the form of the distribution was obviated.

Theoretical considerations suggested that a given self-descriptive statement could be classified as reflecting a positively or negatively directed awareness, feeling or valuation of some aspect of the body, bodily processes, mind or mental processes of the individual. The statements were constructed to form a stratified sample which was

representative of the theory. The scheme followed was essentially that suggested by Stephenson.[5]

By the procedure described above, a sample of the self-concept and the ideal-concept was obtained for each subject in the experimental group. For instance, let us suppose that Subject A placed the statement "I have a good sense of humour" in Column 2 on the self-sort, and in Column 9 on the ideal-sort. This would mean that he did not consider himself to have a particularly good sense of humour, but that he would like to have one. We should say that he exhibited low self-acceptance on this particular item. The numerical difference of seven between the column numbers for this statement is indicative of the degree of dissatisfaction which he feels toward his sense of humour. It is also possible to quantify the concern which he feels for this item by considering the column in which it was placed on the ideal-sort. An item placed in Column 5 on the ideal-sort would suggest indifference, in that the subject did not particularly care whether or not the item should be true of "the person he would most like to be." Thus displacement from Column 5 on the ideal-sort indicates the degree of concern which the subject feels for the statement. In the example given above, we should say that Subject A exhibited a concern of $9 - 5 = 4$ for "sense of humour." Thus for each subject we have, in the raw data, 51 pairs of numbers corresponding to the 51 statements in the sort. Each pair consists of one number giving the column or *truth category* of a statement on the self-sort, with the other giving the corresponding column on the ideal-sort. Presumably a person who is satisfied with himself, or who accepts himself, will have pairs of numbers which are close together; whereas persons with low self-acceptance will have pairs of numbers which exhibit little correspondence. It will be apparent that the 51 pairs of numbers for each subject lend themselves to correlative analysis, and that a resulting high coefficient of correlation would correspond to high self-acceptance, and conversely.

Administration of the Sorts

In the latter part of January, 1955, the forced sort described in the preceding section was administered to five classes of adolescent students. One of these was a grade IX class in an Edmonton Junior High School. The other four were Grade X classes in a large Edmonton Composite High School. Raw data were obtained for 104 of these students, 62 of whom were boys, and 42 of whom were girls. The ages of these students ranged from 12 years 9 months to 18 years 7 months, with a mean age of 15 years 8 months.

[5]William Stephenson, "Some Observations on Q-technique," **Psychological Bulletin** (1952), pp. 483 498.

Although no specific efforts were made to randomize the sample of students, it is felt that they represent a fairly typical cross-section of adolescent students in the City of Edmonton. Inasmuch as scholastic ability may affect the variables of the present study, the grade IX group may be considered as being biased toward higher ability since it was the highest of five ability-grouped classes in the school from which it was taken.

The sorts were conducted during the regular class periods of a course in Health and Personal Development, by the teachers of this course. One period was taken for the administration of the self-sort, and a second period (about a week later) for the ideal-sort.

Analysis of the Data

Correlation Analysis

In subsequent discussion, it will be convenient to use the term *location* to refer to the *truth category* number corresponding to the position of a statement in one of the sorts. Thus to say that the ideal location of statement 48 was 3 means that on the ideal-sort the position of statement 48 corresponded to truth category 3.

The first step in the analysis of the raw data was the calculation, for each subject, of the simple correlation between the locations of the 51 statements in the self-sort and in the ideal-sort. This resulted in 104 correlation coefficients for the entire group of subjects. These ranged from -.208 to .824.

A group ideal-sort was obtained by averaging the locations of each statement over the entire group of subjects, sorting the statements on a distribution chart according to their mean locations, and taking as the group location of a statement its resulting location on the chart. The same procedure was repeated for the groups of boys and girls separately—giving boys' and girls' group ideal-sorts. The self-sort for each girl was correlated with the girls' group ideal-sort, and similarly for the boys. The resulting correlation coefficients were found to range from -264 to .720.

The correlations between the ideal-sort and the appropriate group ideal-sort were calculated for each subject. They ranged from .300 to .912.

Table I summarizes the results of the correlation analysis for the experimental group as a whole, and for its constituent groups of boys and girls.

TABLE I

SEL-IDEAL, SELF-GROUP IDEAL, AND IDEAL-GROUP IDEAL CORRELATIONS BY SEX AND TOTAL GROUP

Sorts	Group	$\bar{z}$	S.E. $\bar{z}$	t ratio	d.f.	C.V. t (1%)	$\bar{r}$	χ^2	C.V. χ^2 (1%)
Self—Ideal	Boys	.48	.033	14.7	61	2.66	.45	193.3	89.6
	Girls	.43	.048	9.0	41	2.71	.40	188.8	65.0
	Total	.46	.027	16.8	103	2.63	.43	385.1	138.5
Self—Group Ideal	Boys	.49	.027	18.4	61	2.66	.45	129.3	89.6
	Girls	.41	.437	10.9	41	2.71	.39	116.4	65.0
	Total	.46	.022	20.7	103	2.63	.43	253.4	138.5
Ideal—Group Ideal	Boys	.82	.026	31.5	61	2.66	.67	122.7	89.6
	Girls	1.00	.037	27.1	41	2.71	.76	112.3	65.0
	Total	.89	.023	38.6	103	2.63	.71	274.0	138.5

NOTE: $\bar{z}$ — the mean "z", using Fisher's method.

S.E. $\bar{z}$ — the standard error of $\bar{z}$.

d.f. — degress of freedom.

C.V. t (1%) — the tabulated critical value of "student's t" at the 1% level of significance for the number of degrees of freedom indicated.

$\bar{r}$ — the mean correlation corresponding to $\bar{z}$. All figures in this column are significant of the 1% level.

χ^2 — the value of chi square found by Tippett's formula for testing for the existence of significant individual differences.

C.V. χ^2 (1%) — the tabulated critical value of chi square at the 1% level of significance for the number of degrees of freedom indicated.

In a statistically similar study involving the changes in the self- and ideal-concepts as a result of client-centered counseling, Butler and Haigh[6] have illustrated the use of a test suggested by Tippett[7] for testing the significance of individual differences in a group of correlations when the mean correlation is significantly different from zero. The criterion for this test is

$$\chi^2 = (N - 3) \sum_n (z - \bar{z})^2$$

where n is the number of subjects, and N is the number of statements in the forced-sort. The number of degrees of freedom is $(n - 1)$. It will be seen from Table I that significant individual

[6]John M. Butler and Gerard V. Haigh, "Changes in the Relation between Self-concepts and Ideal Concepts consequent upon Client-centered Counselling," from **Psychotherapy and Personality Change,** pp. 55-75.

[7]L. H. C. Tippett, **The Methods of Statistics,** p. 180.

differences or subpopulations were found to exist both in the group as a whole and in its constituent group of boys and girls.

The subjects of the study were classified as possessing high, medium or low self-acceptance, group-acceptance or social-integration according as their self-ideal, self-group ideal, or ideal-group ideal correlations fell respectively above, within, or below one standard deviation of the corresponding mean correlation. These cross classifications were analyzed by means of contingency tables. Table II summarizes the computed and tabulated values of chi square obtained from the contingency tables using the formula[8]

$$C = \sqrt{\frac{\chi^2}{N + \chi^2}}$$

where C is the coefficient of contingency.

TABLE II

COMPUTED AND TABULATED VALUES OF CHI SQUARE FOR EXAMINING THE INTERDEPENDENCE AMONG SELF-ACCEPTANCE, GROUP-ACCEPTANCE, AND SOCIAL INTEGRATION

	Self-Acceptance		Group-Acceptance	
Group-Acceptance	Computed: 253.4** Tabulated: 138.5			
Social Integration	Computed: 9.5* Tabulated: 9.488		Computed: 2.04 Tabulated: 9.488	

*Significant at 1% level.
**Significant at 5% level.

Table II suggests that self-acceptance seems to be significantly related to both group-acceptance and social integration. This implies that the group ideal is an influential factor in the relationship between the self-concept and the ideal-concept. In order to examine the nature of this influence, it was decided to use partial correlative analysis to render constant the influence of the group ideal, and to examine the residual self-ideal relationship. By contrasting the residual relationship with the original, it was possible to obtain an indication of the group ideal's influence. The resulting group of 104 partial correlation coefficients ranged from -.277 to .751. The original simple correlations were found to range from -.208 to .824. The mean partial correlation was found to be .22 compared with the original mean simple correlation of .43.

[8]Henry E. Garret, **Statistics in Psychology and Education,** pp. 368-371.

This suggests a general lowering of the self-ideal relationship when the influence of the group ideal is held constant.

Analysis of Concern

As suggested earlier in this paper, each of the self-descriptive statements used in the present study was classified a referring to one of four posible areas of self-perception: body, bodily processes, mind or mental processes. The degree of concern which an individual feels for a given statement is related to the departure of its ideal location from the centre of the distribution chart. A subject who places a statement in the centre column of the chart feels essentially indifferent to it, in that he is not particularly anxious that it be "true" or "untrue" of the person "he would most like to be." The mathematical concern associated with a given statement, for the group as a whole, was taken as the numerical difference between its group ideal location and 5, the location of a statement placed in the centre of the distribution chart. It was felt that one might find some areas of self-perception which exhibited greater concern than others for the adolescent. The statements were grouped by subject of perception, and the mean concern found for each grouping. The same procedure was carried out individually for each of the sexes. Analysis of the differences in the mean concerns for the various areas of self-perception showed none of them to be significant, although there did appear to be a slight tendency for the girls to exhibit greater concern for mental processes than for bodily processes.

Analysis of Dissatisfaction

An individual indicates dissatisfaction with himself when his ideal-concept differs from his self-concept. It was convenient to define the mathematical dissatisfaction associated with a given statement in the forced-sort as the numerical difference between its self and ideal locations. For a group of individuals, the group dissatisfaction of a given statement was taken as the numerical difference between the average self and the ideal locations taken over the entire group. The group dissatisfaction associated with a set of statements, such as those classified under one of the areas of self-perception, was the average of the individual group dissatisfactions for the set.

The group dissatisfactions for each of the sets of statements associated with the various areas of self-perception were calculated for both the boys and girls. Since each of these group dissatisfactions was a mean, intra-sex differences could be tested for significance by means of a distribution-free test developed by van

der Waerden[9]. No significant differences were observed between the group dissatisfactions associated with the various areas of self-perception for the boys. For the girls, it was found that the group dissatisfaction in the area of mind was significantly greater than in the areas of mental processes or bodily processes.

Analysis of Sex Differences

The sex differences in the mean self-ideal, self-group ideal, and ideal-group ideal correlations were computed and tested for significance of departure from zero. None of these differences proved to be significant.

The subjects were classified by sex and by the relative magnitudes of their self-ideal and self-group ideal correlations, to see if there was a significant tendency for the self-ideal correlations of one sex to exceed the self-group ideal correlations more frequently than for the other sex. The test for independence of these classifications, by means of a 2x2 contingency table, resulted in a chi square value of 4.31 which exceeded the critical value of 3.84 for one degree of freedom at the five per cent level of significance. It followed that significantly more girls than boys had a self-ideal correlation that exceeded their self-group ideal correlation.

The percentages of boys and girls in the low and high self-acceptance, group-acceptance, and social integration groups were calculated. In the classification "high social integration" the percentage of girls (30.9) was found to be significantly greater than that of the boys (6.5). Otherwise, no significant sex differences in percentages were found.

The sex differences in the mean concerns and group dissatisfactions for each of the areas of self-perception were computed, and their significances tested by van der Waerden's test. Although none of these differences was found to be significant, the girls seemed to exhibit consistently greater dissatisfaction with self than did the boys. There also appeared to be a tendency for the girls to show greater concern for the mental area of self-perception, and for the boys to be more concerned with the physical area.

In order to obtain a measure of the similarity of the boys' and girls' group ideal-concepts, it was decided to compute the simple correlation between the boys' and girls' group ideal-sorts. This resulted in a correlation of .880 whose departure from zero is significant at the one per cent level. There appears, therefore, to be a highly significant relationship between the group ideal-concepts

[9]B. L. van der Waerden, "Ein neuer Test fur das Problem der zwei Stichproben," **Mathehatische Annalen** (1953), pp. 93-107.

of the boys and girls who constituted the subjects of this investigation.

Conclusions

It has been customary for forced-sorts to be administered individually. In the present study, an attempt was made to administer a self-ideal forced-sort to several classes of adolescent students. This was facilitated by the use of a distribution chart which permitted the continuous comparison of self-descriptive statements, and made it possible for each subject to record his own sorts and identifying data.

It is not intended that the following conclusions should apply beyond the experimental group of the present investigation. At best, they can serve as hypotheses to be tested on a wider scale.

1. Moderate but highly significant linear relationships were found to exist between the self- and ideal-concepts for the group as a whole, and for its constituent groups of boys and girls. The total group and the constituent groups were found to contain significant individual differences in the self-ideal relationship. This suggests the presence of significant subpopulations whose determinants might serve as a rewarding subject for further investigation. The methods of factor analysis would seem to be appropriate to such a study.

2. Group ideal sorts were derived for the total group and for the groups of boys and girls. Significant moderate linear relationships were found to exist between each of these group ideal sorts and the self-sorts of the corresponding groups of subjects. In all instances, strong evidence was obtained for the existence of significant individual differences or subpopulations.

3. Very significant high linear relationships were found between the ideal-concepts of the subjects constituting the total group, the boys' group, the girls' group, and the corresponding group ideals. This suggests a uniformly strong tendency for the ideal-concept of an adolescent to conform to the ideal concept of the group of which he is a member. Again, evidence of the existence of significant individual differences in the ideal-group ideal relationship was obtained.

4. The influence of the group ideal concepts of the boys' and girls' groups on their self-ideal relationships was examined by partial correlative analysis. It was observed that by holding the group ideal constant, a lowering of the self-ideal relationship resulted. It is difficult to isolate the precise area where this influence is greatest. It may reflect the group's influence on the expressed concept of self: that is, it may reflect a conscious

tendency of the individual to describe himself with a bias in the direction of what the group considers desirable. On the other hand, it may reflect the influence of the group ideal on his own ideal-concept.

5. A strong tendency was found for subjects who exhibit a high (or low) self-ideal relationship also to exhibit a high (or low) self-group ideal relationship. This suggests that adolescents who accept themselves will also be acceptable to the group of which they are a member, and conversely.

6. A significant tendency was observed for subjects with a high (or low) self-ideal relationship also to exhibit a high (or low) ideal-group ideal relationship. One might conjecture from this evidence that adolescents who accept themselves tend to direct their self development in the general direction of the "desired person" of the group of which they are members, and conversely.

7. On the other hand, no tendency was observed for subjects who have high (or low) self-group ideal relationships to exhibit high (or low) ideal-group ideal relationships. Thus no evidence was obtained to support the hypothesis that adolescents whose concepts of themselves resemble the group ideal also wish to direct their self development toward the "desired person" of the group of which they are members, and conversely.

8. For the group as a whole, no significant differences were found in the concern felt for the various areas of the perceived self. Similarly, no significant intra-sex differences in concern for these areas were observed, although there appeared to be a slight tendency for the girls to be more concerned with the area of mental processes than with that of bodily processes. The limited coverage of these areas, together with the obscuring influence of the averaging process, makes this apparent uniformity of doubtful significance.

9. Analysis of the intra-sex differences in "dissatisfaction with the areas of the perceived self" showed that the girls were significantly more dissatisfied with the area of mind than with mental processes or bodily processes. No significant differences in the dissatisfactions associated with the various areas of self-perception were found for the boys.

10. The boys' and girls' mean self-ideal, self-group ideal, and ideal-group ideal correlations were examined for significant sex differences. Although none were found, further analysis showed a significant tendency for a larger proportion of girls than of boys to have self-ideal correlations which exceeded their self-group correlations, and for a higher proportion of boys than of girls to

have self-group ideal correlations which exceeded their self-ideal correlations. This may be interpreted to mean that, in adolescence, there is a tendency for a larger proportion of girls than of boys to have self-concepts which conform more to their own ideal-concepts than with the group ideal for their sex, and for a higher proportion of boys than of girls to have self-concepts which conform more to the group ideal for their sex than with their own ideal-concepts. This may well reflect the greater social pressure which is placed on the boy to conform to a prototype than is the case with the girl. Masculine conventions in dress and behavior are more rigidly maintained than are their feminine counterparts. The stigma attached to the sissy is much more severe than that attached to the tomboy. It is difficult to find the feminine counterpart of "Huck Finn" or the "real American boy."

11. Analysis of the percentages of boys and girls in the high and low self-acceptance, group-acceptance, and social-integration groups showed no significant sex differences except in the high "social-integration" group, where a significantly higher percentage of girls than of boys were found to have a high degree of conformity between their ideal-concepts and the corresponding group ideal. This may be interpreted as meaning that, in adolescence, a higher proportion of girls than of boys are desirous of conforming to the group ideal for their sex.

12. No significant sex differences in "concern" for the various areas of self-perception were found. There did appear to be a slight tendency for the girls, more than for the boys, to be concerned with the general mental area of self-perception, and for the boys, more than for the girls, to be concerned with the physical aspects of the self.

13. The group dissatisfactions associated with the various areas of the perceived self were investigated for significant sex differences. Although none were found, there seemed to be a consistent tendency for the girls, more than for the boys, to be dissatisfied with all the areas of self-perception.

14. Little extensive analysis was applied to determine the significance of the sex differences in the group ideals of the boys and girls. The very significant high correlation found between the boys' and girls' group ideal sorts suggests that any such differences would be small.

BIBLIOGRAPHY

Butler, John M. and Haigh, Gerard V. "Changes in the Relation between Self-concepts and Ideal Concepts consequent upon Client-centered Counselling." From Carl R. Rogers and Rosalind F. Dymond, *Psychotherapy and Personality Change,* University of Chicago Press, 1954, pp. 55-75.

Garrett, Henry E. *Statistics in Psychology and Education.* New York, Longman, Green and Company, 1953.

Jersild, Arthur T. *In Search of Self.* New York, Bureau of Publications, Teachers College, Columbia University, 1952.

Lecky, Prescott. *Self-Consistency.* New York, Island Press, 1945.

Stephenson, William, "Some Observances on Q-technique." *Psychological Bulletin* XLIX (1952), pp. 483-498.

Super, Donald E. "Vocational Adjustment: Implementing a Self-Concept." *Occupations* XXX (1951), pp. 88-92.

Symonds, Percival W. *The Ego and the Self.* New York, Appleton-Century-Crofts Inc., 1951.

Tippett, L. H. C. *The Methods of Statistics.* London, Williams and Norgate, 1937.

van der Waerden, B.L. "Ein neuer Test fur das Problem der Zwei Stichprobrn." *Mathematische Annalen* CXXVI (1953), pp. 93-107.

AN INVESTIGATION INTO THE ANNOYANCES AND FRUSTRATIONS WHICH CAUSE ALBERTA TEACHERS TO QUIT TEACHING

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Ths Problem

For at least a decade Alberta has experienced a serious teacher shortage. Hundreds of children have never had the privilege of being taught by a qualified teacher. The only opportunity for formal education in some areas has consisted of correspondence courses from the Department of Education. In spite of the many emergency methods employed by the Department of Education, the Teacher Recruitment Committee and the Alberta School Trustees' Association, the shortage persists, and it shows no sign of abatement.

In a recent study of provincial population trends[1], Professor Card of the University of Alberta offered this prediction:

> The number of teachers required per year to offset loss to the profession and to provide for increased school enrolments is in the order of 1,000 to 1,100 from 1952 to 1956, 1,200 to 1,375 from 1957 to 1961, and 1,375 to 1,500 from 1962 to 1966.

Professor Card's predictions for school population have already proved accurate. In a folder[2] prepared for high school graduates the Teacher Recruitment Committee states:

> In Alberta more than 1,000 extra teachers will be needed annually for the next ten years. Why?
>
> 1. To take care of Alberta's increasing school population (400 teachers required annually).
>
> 2. To replace persons leaving the profession (more than 700 teachers annually).
>
> Alberta's school population increased over 12,000 last year. Who will teach these 12,000 pupils?

Alberta requires 1,000 additional teachers annually. The total freshman enrolment in the Faculty of Education in 1954 was 549. Where will the extra teachers come from? One source of supply might be the more than 700 teachers who quit the profession every year. If the annoyances and frustrations of these ex-teachers were known, it would be possible to make recommendations for the improvement of conditions in the teaching profession. Any reduction in the ten per cent annual loss of teachers would go a long way toward solving the teacher shortage.

1Card, B. Y., **Population Trends in Alberta Affecting Teacher Demand and Supply,** p. 2.

2Teacher Recruitment Committee of the Department of Education, **Today's High School Graduate is Tomorrow's Teacher.**

Related Studies

Two recent Canadian studies give attention to the teacher shortage. In September, 1948, the Canadian Education Association made public a report[3] on the status of the teaching profession. The 142 page report was assembled from information gathered by questionnaires which were sent to sample populations throughout Canada. It recommended the following program of action:

1. Salaries and pensions for teachers must be increase substantially.
2. Living and working conditions for teachers must be improved.
3. Candidates for the teaching profession must have a higher standard of education, above average intelligence, good character, and a healthy interest in society.
4. Scholarships and other financial aid should be given to selected trainees.

In March, 1953, MacLean's Magazine published a report[4] entitled "The Crisis in Education." The article was the result of a four-month study of educational plants, teachers, school officials and taxpayers from British Columbia to Newfoundland. The writer states that the following things hinder teachers:

1. Overzealous parents—and those who show no interest
2. Overcrowded schools leading to unsuitable school accommodation
3. Outside interference that breaks class concentration
4. A salary scale lower than that of most professional groups

According to the article, these things help teachers:

1. Teacher participation in school policy, planning
2. Supply of modern aids like movies and records
3. Best possible instruction in teachers' colleges
4. Greater personal freedom and higher public status.

Procedure

The teachers who actually quit teaching are the only ones who know the conditions which caused them to abandon the profession. Therefore it was decided to try to learn from them the reasons why teachers leave the classroom. The plan was to contact ex-teachers by use of carefully prepared questionnaires.

The most fruitful source of information concerning ex-teachers was the office of the Teachers' Retirement Fund. With the help of

3M. E. Lazerte and others, **An S.O.S. from the Schools.**

4Sidney Katz, "The Crisis in Education," **MacLean's Magazine** (March 1, 1953), p. 7.

this office and personal contacts with former teachers, 283 questionnaires were completed. Of these, 221 fell within the limits of the study. It is worthy of note that many ex-teachers seemed reluctant to complete the questionnaire.

Limits of the Study

To make the study yield insights valid today the following limits were imposed on the sample of ex-teachers whose information constitute the data of this investigation.

1. They must have held a valid teaching certificate.
2. They must have taught in Alberta at least one year since 1945.
3. They must have quit teaching to enter another occupation or to prepare for another occupation.
4. They must not include girls who quit teaching to get married.

The Interview

To establish the reliability of the procedure, a sample of twenty ex-teachers was drawn from the 221 who answered the questionnaire. These were checked by interview on the twenty most important items of the questionnaire. A comparison of interview and questionnaire responses revealed a correspondence of over 92 per cent.

The Single Female Who Quits Teaching

School and community

Of the 31 single females who answered the questionnaire four left the teaching profession from rural schools. Eighty-seven per cent left graded schools, 77 per cent of these schools being in cities, towns, villages or hamlets. Since such a small number of the schools were rural it was surprising to find that they were so poorly equipped. The majority lacked gymnasiums, auditoriums, shops, home economics rooms, libraries, and modern teaching aids such as duplicators, film strip projectors and tape recorders. One third of them lacked indoor toilets. Thirty-two per cent of the single girls wanted better classrooms and facilities before they would consider returning to teaching.

Cultural opportunities in many of the communities were limited. The girls complained most about a lack of friends of their own age and suitable recreational facilities.

Living accommodation in many cases was primitive. Nearly two-thirds of the boarding houses lacked three-piece bathrooms and adequate insulation; 61 per cent lacked running water and 52 per cent did not have a telephone. In 61 per cent of the communities

good room and board were not available. Good living conditions are important to single girls: 27 per cent of those who would consider returning to teaching said they would want better accommodation.

Professional training

Table I shows the professional training of the single girls and makes a comparison between the number of years of training and the average number of years of teaching service.

TABLE I

A COMPARISON OF YEARS OF TEACHER TRAINING WITH LENGTH OF TEACHING SERVICE FOR THIRTY SINGLE FEMALE TEACHERS

Period of Training	Number	Percent	Average years of Service
One year	14	45	2.46
Two years	12	39	5.67
Three years	1	3	5.00
Four years	4	13	11.25
Totals	31	100	4.92

Teachers with two years of training taught, on the average, more than twice as long as teachers with one year of training; teachers with four years of training taught nearly five times as long as teachers with one year of training. Only one teacher reported three years of training. The study seems to indicate that teachers with higher qualifications tend to teach longer.

Hours of work

The 29 ex-teachers who reported their enrolments left heavy schools. The average enrolment for urban classrooms was 35 pupils, and most of the rooms had two or more grades. The heavy schools required many hours of preparation and correction of work. The average girl worked 3.85 hours overtime each day. More than half of the girls had extracurricular activities to supervise.

Many girls complained about the heavy schools. Thirty-two per cent would not return to teaching unless there were smaller enrolments or fewer grades.

The economic factor

Not many single women complained about the economic factors in teaching. Twenty-three per cent reported better pay in their

new occupations. A few girls admitted that they were getting less pay than when they were teaching. The most common complaints were that friends with less education were making more money, that higher qualifications were too expensive, and that teaching lacks opportunity for promotion.

Social conditions

Seventy-four per cent of the girls reported adverse social conditions associated with teaching. The most common complaints were:

1. Teaching places restrictions on social privileges.
2. Poor living accommodation makes social life difficult.
3. Teachers are commonly used as scapegoats.
4. Teachers lack normal opportunities to meet the opposite sex.

Parents

Seventy-four per cent of the single females had trouble with the parents of their pupils. The most common difficulties were as follows:

1. Parents blame the teacher when the pupil fails.
2. Parents believe tales brought home by pupils.
3. Parents enjoy privileges which they are not willing to allow teachers to enjoy.

Superintendents

Few girls were critical of their superintendents. The most common complaints were that they did not give the beginning teacher enough help, and that when hiring teachers they sometimes misrepresented conditions in undesirable schools.

Pedagogical difficulties

More than half of the girls complained about the lack of appropriate reference books. Other common difficulties were vague courses of study, inability to handle disciplinary problems, and the necessity of being on duty during lunch hour.

Return to teaching

Of the 31 ex-teachers 22 would return to teaching if certain conditions in the profession were changed. Following are the changes, in order of urgency, that the girls wanted:

1. Smaller enrolments and fewer grades
2. Better classrooms and facilities
3. Improved living conditions for teachers
4. Higher salaries.

Retention of teachers

The single females recommended that these things be done:

1. Pay teachers higher salaries.
2. Raise teachers qualifications.
3. Limit enrolments.
4. Improve parent-teacher relations.
5. Provide better living accommodation.
6. Improve classrooms and equipment.
7. Give the beginning teacher more help.

Why Single Males Quit Teaching

School and community

Of the 30 single males in the sample, nine quit the profession while teaching rural schools. Thirty per cent of the young men were unhappy in rural areas and small towns; nine per cent of them would return to teaching only if they could get a position in a graded school.

Even though 70 per cent of the schools were graded, the school plants and equipment left much to be desired. They were more poorly equipped than were the schools where the single females quit teaching. Many young men expressed their dissatisfaction with inadequate school buildings and lack of modern equipment. Better classrooms and equipment were required by over 18 per cent of the young men who would consider returning to the teaching profession.

Living accommodation and teacherages were even worse than the schools. Seventy-five per cent of the accommodation available to teachers lacked bathrooms, 60 per cent lacked running water and insulation, and 35 per cent had no electricity. Room and board was not available in 38 per cent of the communities. Fifteen per cent of the young men required improved living conditions before they would consider returning to the profession.

Cultural activities in the communities were not adequate for young people. There was no provision for sports of any kind in many areas. Like the young girls, the single men complained most often of a lack of friends of the same age. A lack of public libraries, too, was a source of annoyance.

Professional training

The sample of single males, like that of the single females, indicates that the more training teachers have the longer they teach. The indication, however, is not nearly as marked in the case of the young men. Those with two years of training taught 27 per cent longer than those with one year of training, and those

with B.Ed. degrees taught 51 per cent longer than the one-year trainees.

The average young man quit the teaching profession sooner than the average young woman. The single girls on the average gave 21 per cent more service than the single males.

Nine per cent of the single men who would consider returning to teaching wanted more professional training first, and 18 per cent would not return until the qualifications of teachers generally were raised.

Hours of work

Sixty-eight per cent of the schools had enrolments of from 30 to 50 pupils. The large classes kept the young men busy but they did not complain about heavy enrolments, even though they worked an average of more than three and a half overtime hours each day. In urban centres 58 per cent of the teachers were responsible for some form of community work with children. A few young men thought there should be extra pay for this work.

The economic factor

Approximately three out of four of the single men were dissatisfied with the economic aspect of the teaching profession. Table II shows the factors which caused most dissatisfaction.

TABLE II

THE ECONOMIC FACTOR AS A SOURCE OF DISSATISFACTION TO THIRTY SINGLE MALE EX-TEACHERS

Source of Dissatisfaction	Number	Percent
1. The salary for teaching was less than that of my present occupation	16	53
2. Friends with less education and no training made more money	14	46
3. Anticipated salaries were lower for teaching than for my present occupation	13	43
4. Teaching lacks opportunity for promotion	9	30
5. It costs too much to get the qualification to earn higher salaries	9	30
6. Lately, hours and conditions in other occupations have improved, while teaching has become more difficult	9	30

Social conditions

Forty-three per cent of the single men reported more social freedom in occupations other than teaching. Thirty-seven per cent of them thought that the low entrance requirements for the profession lowered the teachers' prestige and that the poor living accommodation provided for teachers hindered them socially. One teacher in five complained about being responsible for community activities; one young man out of ten thought that teaching was spoiling his personality.

Parents

Eighty per cent of the young men had difficulty with some of the parents. Most common complaints in order of frequency were:

1. Parents do not insist that their children attend school regularly.
2. Parents do not consult teachers about children.
3. Parents show no interest whatever in school.
4. Parents blame the teacher when the pupil fails.
5. Parents enjoy privileges that they are not willing to allow teachers to enjoy.

Superintendents

Most of the young men had no fault to find with the superintendents. A few though that superintendents did not give the beginning teachers enough help, and that they sometimes made promises which they could not fulfil.

Pedagogical difficulties

The most common pedagogical difficulties of young men were much the same as those of the young women. The list of difficulties follows in order of the frequency with which each one was reported:

1. There was a shortage of adequate reference books.
2. The courses of study were indefinite.
3. The young men disliked having to be on duty during lunch hour.
4. Many were unable to handle disciplinary problems.

Return to teaching

Five ex-teachers would not return to teaching under any circumstances. Twenty-two of them would return under certain conditions, the most important of which are stated below:

1. Salaries would have to be higher.
2. Qualifications of teachers generally would have to be raised.

3. The prestige of the teaching profession would have to be better.

Better classrooms and facilities and improved living conditions for teachers were on the list, but they were of minor importance when compared with the two major requests—money and prestige.

Retention of teachers

Twenty-seven of the young men made the following recommendations:

1. Raise teachers' salaries.
2. Increase the requirements for teacher certification.
3. Improve the prestige of the profession.
4. Raise the entrance requirements.

Most of the items are concerned with salary or prestige. These two seem to be by far the most important considerations for single males.

Married Females Who Quit Teaching

This study indicates that the majority of teachers in rural schools are married women. Twenty-one of the 66 women left rural schools. Most of the sample of married females left schools housed in uncomfortable buildings with inadequate facilities. The dearth of comfort and equipment may have had some effect in driving the mothers back to their household duties. Thirteen per cent of the married women wanted better classrooms and facilities before they would return to teaching.

Living accommodation for many of the married women presented no problem because they had their homes in the community. For others, however, living accommodation was an acute problem. In many districts accommodation was entirely lacking or quite inadequate. Seventy-three per cent of the places which the ex-teachers left did not have modern bathrooms; more than half lacked electricity. Of the married women who would return to teaching, 16 per cent wanted large, comfortable teacherages.

Professional training

Only three of the married women had university degrees. Seventy-three per cent of them had one year of training and 21 per cent had two years. The teachers with two years of training taught an average of nearly five years longer than teachers with one year. Two teachers with more than two years of training did not teach as long as those with two years of training, but the inadequate size of this sample makes a conclusion insecure.

Hours of work

Three-quarters of the married women had dependents at home,

but in spite of this they spent an average of 3.53 hours overtime each day on school work. Table III shows the range of overtime per day.

TABLE III

AVEERAGE HOURS OF OVERTIME PER DAY WORKED BY SIXTY-SIX MARRIED FEMALE TEACHERS

Overtime Hours	Number of Teachers	Percentage
1—2	7	10.61
2—3	21	31.82
3—4	11	16.67
4—5	16	24.24
5—6	4	6.06
6 and over	7	10.61
Totals	66	100.01

It would appear that most of the married women did not shirk their teaching duties because of family obligations. Several of the married women said that they had quit teaching because they found it impossible to do justice to two jobs at the same time. Nearly 73 per cent of the married women who quit teaching returned to household duties.

Some of the women complained about heavy enrolments. About nine per cent wanted smaller enrolments and fewer grades before they would consider teaching again.

The economic factor

On the whole, the married women seemed quite satisfied with salaries and economic conditions in the teaching profession. Only one-third of the sample reported dissatisfaction of any kind. The most common complaint was that higher qualifications in teaching cost too much. It is likely that with one breadwinner in the family, the economic factor is not too important to most of the married women.

Social conditions

Married women were not as concerned about adverse social conditions in teaching as were the single females and males. Their most common trouble seemed to be a difficulty in having a successful social life with the type of living accommodation provided for

teachers. The married women also felt that their social life was restricted because they were teachers.

Parents

Having children of their own did not seem to make it any easier for married women teachers to get along with parents in the community. Eighty per cent of the ex-teachers complained about the behavior of some of the parents. The most common complaints were:

1. Parents blame the teacher when the pupils fail.
2. Parents believe tales children bring home from school.
3. Many parents send their children to school before they are mature enough to learn to read.

Superintendents

The majority of the ex-teachers in this sample had no fault to find with superintendents. The most serious criticism of the minority was that superintendents do not give beginning teachers enough help. Some ex-teachers thought that superintendents were inclined to make promises which they could not fulfill.

Health

Six married women claimed that teaching was responsible for their present poor health. Three others said they had to quit teaching because of poor health. Eleven per cent of the sample said that it was difficult for teachers to maintain good mental health and 21 per cent claimed that the noisy environment made them excessively tired at the end of a teaching day. Nearly one-third of the teachers complained because there was not a minute to relax during the whole day. Several women found teaching hard on the nerves.

Pedagogical Difficulties

The majority of married women had pedagogical difficulties. Their most common troubles were the same as those experienced by single males and females, namely:

1. A shortage of appropriate reference books
2. Having to be on duty during lunch hour
3. Vagueness of the courses of study

Return to teaching

Seventy-five per cent of the married women would teach again if certain conditions were different. Only nine per cent of them would require higher salaries. The conditions necessary to bring most of the married women back to teaching follow:

1. The family would have to be of school age.
2. Living conditions for teachers would have to be better.
3. Personal teaching qualifications would have to be improved.
4. Classrooms and equipment would have to be better.

Retention of teachers

The married women thought the following things should be done to keep good teachers in the classrooms:

1. Pay teachers higher salaries.
2. Raise the requirements for teaching certificates.
3. Provide better living accommodation for teachers.
4. Improve classrooms and equipment.
5. Improve the prestige of the profession.

It is interesting to note that while most of the married women did not want higher salaries for themselves, they thought that better salaries were of prime importance in keeping good teachers in the classrooms.

Married Males Who Quit Teaching

School and community

There were 94 men in the sample of married male ex-teachers. Only 11 of them left rural schools. Since the great majority left city, town or village schools, it was surprising to find that, on the whole, they were inadequate and poorly equipped. Though the lack of equipment may have annoyed the men, it did not cause them to quit teaching. Only 3.57 per cent of the men said they wanted better classrooms and facilities before they would return to teaching.

There was considerable grumbling about poor living accommodation provided for teachers, and there probably would have been more except for the fact that 17 of the men owned their homes. What the men wanted most was a well insulated house with electricity, running water, and a three-piece bathroom. Many of them wanted a garage. Lack of living accommodation was troublesome but it was not a major reason for men quitting the profession. One teacher probably summed up the way most of the men felt when he said: "If the salaries were adequate we would soon supply our own living accommodation."

Hours of work

Most of the married males quit teaching in difficult schools. The average enrolment was 31.06 pupils and 39 per cent of the men had enrolments between 35 and 45. That the men had to work hard is indicated by the fact that some of them put in between seven and eight overtime hours each day. The average overtime for married

males was 3.61 hours per day. Some men worked as much as 65 hours a week at teaching. Seventy per cent of the men had extra-curricular activities to supervise. Although the men complained about the long hours and heavy enrolments, only nine per cent of them considered that they were factors which caused them to quit teaching.

Professional training

The married men in the sample represented a very great loss to the teaching profession. More than 72 per cent of them had two or more years of teacher training. More than 41 per cent had one or two university degrees. If the sample is representative of the men leaving the profession, the loss of male teachers is indeed serious.

Married men with two years of training taught, on the average, 48 per cent longer than those with one year of training. There were only seven teachers with three years of training, but they taught on the average more than twice as long as the teachers with one year of training. It was surprising to note that teachers with degrees did not stay in the profession as long on the average as teachers without degrees. The reason for this anomaly was that 83 per cent of the ex-teachers with degrees were either making more money at their present occupations or expected to make more. It is apparent that there are better salaries for teachers with degrees outside the teaching profession.

The economic factor

Eighty-six per cent of the married male ex-teachers were dissatisfied with the economic factors in the teaching profession. Forty-eight per cent were receiving better pay in their new occupations and 44 per cent expected to receive more salary. Forty-three per cent said that teaching lacks opportunities for promotion.

The economic factor was far more important than any other in causing men to choose another occupation. More than 50 per cent of the married men in the sample required some adjustment of the salary scale for teachers before they would consider returning to the profession.

Social life

Approximately 77 per cent of the married men were dissatisfied with the social life of teachers. Poor living quarters made it difficult for many to have a successful social life. Many others resented the fact that the public expected them to be on their best behavior at all times. About 25 per cent complained about the low prestige of the

profession. Nearly 30 per cent of the ex-teachers felt that changing their occupation had improved their social life.

Parents

Married males had less difficulty with parents than had the females or single males. However, they made nearly the same complaints about parents, and some of the male ex-teachers made some pointed remarks about a lack of discipline in the homes.

Three of the ex-teachers would want better parent-teacher relations before they could be induced to return to the profession. Six men thought it would help to keep good teachers in the schools if parents would co-operate with the teachers.

Superintendents

Twenty-one per cent of the married males thought that superintendents tried to keep teachers' salaries down so that school boards could stay within their budgets. However, there were nearly as many favorable remarks about superintendents as there were critical remarks. Only four of the ex-teachers thought that the quality of the superintendents should be improved.

Health

Nine of the married men had to quit teaching because of poor health, and seven of these claimed that teaching was responsible for their poor health. Forty-one per cent felt that there wasn't a minute to relax during the entire teaching day, 20 per cent found the noisy environment excessively tiring, and a few found teaching a nerve-racking occupation.

Pedagogical difficulties

The married males agreed with the other ex-teachers that the two most common pedagogical difficulties were:

1. Vague courses of study
2. A lack of suitable reference books

Twenty-two per cent of the married men complained that they did not get their choice of subjects or grades to teach.

Return to teaching

Eighty-four of the men out of a total of 94 would return to teaching under certain conditions. They asked for these things:

1. Improvement in salaries
2. Increased prestige of teaching
3. Curriculum changes
4. More control over discipline
5. Less over-loading of teachers with high enrolments, too many grades and too many subjects

Retention of teachers

The married men were asked what they thought should be done to keep good teachers in the classrooms. Table IV is a summary of the most common recommendations.

TABLE IV

WHAT EIGHTY-SEVEN MARRIED MALE EX-TEACHERS THINK SHOULD BE DONE TO KEEP SCHOOLS SUPPLIED WITH GOOD TEACHERS

Recommendations	No. of Teachers	Per Cent of Teachers
1. Improve teachers' salaries	58	66.67
2. Lengthen the training period and raise the standard for teacher certification	23	26.44
3. Launch a definite program to make teaching a profession with the prestige of other professions	17	19.54
4. Take definite steps to make the public realize the importance of their teachers	13	14.94
5. Raise the entrance requirements for the Faculty of Education	9	10.34

Conclusions

The conclusions below are based on the questionnaires received from 221 ex-teachers of the Province of Alberta. The respondents seemed to be genuinely interested in doing what they could to help to discover why teachers quit teaching. Many wrote long letters to supplement the information on the questionnaire, and nearly every questionnaire had illuminating comments written upon it. Several of the ex-teachers expressed the wish that the resulting study would be used to help correct existing conditions in the teaching profession. No questionnaire was answered facetiously; most of the replies were gratifyingly frank and earnest.

From the majority of the complaints made by the total sample of ex-teachers the following aspects of teaching were found to be most annoying and frustrating:

1. Many schools were unattractive and poorly equipped.
2. Living accommodations were primitive in many of the school districts.
3. Most of the ex-teachers had been overloaded with extra-curricular activities, and with either heavy enrolments or too many grades and subjects.

4. Friends with less education and no special training were making higher salaries than the teachers.
5. Most of the ex-teachers worked much longer than the popular forty-hour week. Many worked up to 65 hours per week when they were in the teaching profession.
6. Teachers were generally expected to be on their best behavior at all times.
7. Parents were often uncooperative. Many condoned the behavior of their children whether or not the teacher approved.
8. Superintendents were often too busy to give the beginning teacher enough help. When hiring teachers, some superintendents tend to misrepresent conditions in undesirable schools.
9. Teaching was an exacting occupation for many teachers. A few reported it as a nerve-racking ordeal.
10. The courses of study were not definite enough. There was a very general complaint about the lack of reference books.

While each item in the above list of disadvantages may have had a cumulative effect which drove many teachers out of the profession, the information on the questionnaires indicated that

1. The majority of the males in the sample quit teaching because
   (*a*) The salaries in teaching were too low.
   (*b*) The prestige of the male teacher was not adequate.
2. The single females quit teaching because
   (*a*) Most schools had heavy enrolments, too many grades and too many subjects.
   (*b*) Schools were uncomfortable and unattractive. They lacked modern equipment.
   (*c*) The living accommodation available to teachers in many school districts was primitive.
3. The married women quit teaching because
   (*a*) Their families at home required their full time.
   (*b*) There were no adequate teacherages to be had at a reasonable rent.
   (*c*) They could not improve their qualifications without leaving their families to attend summer school.

Recommendations

All of the ex-teachers were asked to state what they thought should be done to keep the classrooms staffed with good teachers.

A majority of males and females alike made these recommendations:

1. The salaries of teachers must be raised.
2. The minimum qualifications for teachers must be improved.

The teachers were not unanimous concerning how their economic condition might be improved. Some recommended the use of a bonus for married male teachers, increasing with each dependent. Others recommended broader salary schedules, permitting the prospect of continued increments for a longer portion of their working lives. They approved recognition of years of training and experience in salary schedules. Some urged special increments to teachers completing twenty years of service. Finally they recommended a wider range of salaries for administrators in order to provide incentives for young teachers to remain in the profession.

The improvement of teacher qualification led to a variety of recommendations. Most popular was a minimum of two years of teacher training before certification. Several ex-teachers recommended four years of training in advance of certification. There was wide rejection of short-term and emergency teacher training programs, not only because of lowered quality of educational service, but also because of the adverse effect on the prestige and morale of the teaching profession.

PHYSICAL EDUCATION IN ALBERTA HIGH SCHOOLS

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The Study

Authorities in the field of physical education stress its importance in the school program. Many, indeed, argue that physical education is the most important part of the program because of its efficacy in character and social development, as well as physical development.

However this may be, teachers from various parts of the province have expressed doubts that the potential values of physical education are being realized because of weaknesses in the program and the lack of appropriate facilities. The present study was designed to investigate these doubts. Specifically, the writer set out to determine:

1. The extent to which physical education programs, facilities, and related factors in Alberta high schools conform to standards recommended by recognized authorities.
2. The standards which are necessary to carry out an adequate program of physical education with particular reference to all-round participation throughout the year.

Related Studies

Research related to the present study is meagre enough. The writer found only five studies which were applicable. Guerrara's New York study[1] dealt mostly with gymnasium size and activity areas. In 1943 Arthur Eriksson[2] surveyed the teaching of physical education and health in representative one-room rural schools in Alberta, recommending increased professional training, more extensive use of the school day for physical education, and the use of school property for community recreation purposes. Panton's Western Canada study[3] showed a serious lack of gymnasium facilities in at least 90 per cent of all schools. Hughes' survey[4] of Victoria schools indicated that the program was not too well organized, with many facilities found to be inadequate.

1J. A. Guerrara, "A Survey of Physical Education Facilities," **Scholastic Coach** (January, 1953).

2Arthur W. Eriksson, **A Survey of Physical Education and Health in Representative One-Room Schools of Alberta.**

3James Hayes Panton, **A Survey of Men's Intramural Programs in Universities and Secondary Schools in Manitoba, Saskatchewan, Alberta and British Columbia.**

4Richard L. Hughes, **A Survey of the Physical Education Programs in the Secondary Schools of Greater Victoria, British Columbia Area.**

McLachlin,[5] in his survey of Alberta city schools, obtained data which revealed that the program was below accepted standards. Particular deficiencies included lack of yearly outlines, lack of outdoor facilities, and a weak recreational program for the faculty. The development of a Canadian physical education score card was recommended.

The Questionnaire

Since the many aspects of physical education were too numerous for a single survey, topics were selected as listed below.

The questionnaire was developed as a tool for gaining information about these topics. It was organized in the form of a score card—based, where possible, on LaPorte's Score Card No. 2,[6] and revised to make it applicable to the Alberta situation. The questionnaire was sent to one hundred representative high schools throughout the province. A total of seventy-four questionnaires were completed and returned.

Following are the topics covered by the survey:

1. Program of studies
2. Equipment and supplies
3. Outdoor areas and facilities
4. Indoor areas and facilities
5. Intramural and interscholastic programs.
6. Utilization of community resources
7. Certification and training of teachers

Topic 6, utilization of community resources, was optional. Its inclusion was only to gain information about assistance frm agencies outside the school, and no score value was attached to it.

On the basis of a check list for all the other items, scores were computed for individual schools. School scores could thus be compared one with another, and also with a minimum standard score.

Findings

General scores

Table I gives the general scores for different kinds of school area. The offerings of large town and city schools appear to be superior to the offerings of others.

Equipment

Table II indicates the equipment being put to use in the schools of the province. The items listed were selected from several approved lists. Obviously many schools in Alberta lack suitable equipment and supplies.

[5]Herbert J. M. McLachlin, **A Survey of Physical Education Curriculums, Facilities and Administrative Organizations in the Senior High Schools in the Cities of Alberta.**

[6]W. R. LaPorte, **The Physical Education Curriculum,** pp. 71-85.

TABLE I

AVERAGE SCORES IN DIFFERENT SCHOOL AREAS

Kind of School	Program	Equipment	Outdoor Facilities	Indoor Facilities	Intramural and Interscholastic Activities	Certification	Total
Edmonton and Calgary schools	81	38	13	29	52	7	220
City or town school of 5 or more rooms	91	47	15	28	55	17	253
Private schools	64	29	11	24	34	11	173
Town schools of 4 or fewer rooms	71	27	13	16	40	9	176
Rural and village schools	69	21	15	8	34	5	152

TABLE II

NUMBER OF SCHOOLS WITH SPECIFIC EQUIPMENT AND SUPPLIES

Equipment and Supplies	Number of Schools
Basketballs	39
Footballs	31
Soccer balls	21
Volleyballs	39
Jumping standards	41
Tennis nets	10
Tumbling mats	29
Badminton nets	28
Badminton rackets and presses	16
Tennis rackets and presses	5
Catcher's mask and chest protector	35
Goal pads	35
Stop-watch	20
Measuring tape	31
Record player	59
Records for rhythms	21
Softballs	58
Softball bats	50
Springboard	27
Parallel bars	13
Box horse	30
High bar	6
Rings	6
Climbing rope	4
Baseballs	41
Baseball bat	45
Discus and Shot put	26

Facilities and services

Table III shows the extent to which Alberta schools supply nineteen basic facilities and services. Playgrounds require separate mention. Only five of the 74 schools could boast of a turf playground surface in excellent condition.

TABLE III

NUMBER OF SCHOOLS WITH SPECIFIC FACILITIES AND SERVICES

Facilities and Services	Number of Schools
Boy's and girl's gymnasium	5
Physical instructor's office	3
Apparatus room	10
Storage room for equipment	22
Locker and basket per pupil	7
Shower facilities	18
Footbath	1
Pupils' clothing storage facilities	9
Towels	3
Fixtures for volleyball net	40
Fixtures for badminton net	24
Basketball backboards	38
Rest room with cot	21
Proper sanitary facilities	41
Health Service room	8
Bleacher accommodation	10
Recessed non-glare lighting	15
Supply room	8
Room for corrective physical education	3

Inerscholastic activities

These were found to be carried on rather extensively. Seventy of the schools participated, some in as many as six different activities. Most schools had to travel many miles in order to compete in inter-school athletics.

Basic program and organization

Only twelve of the 74 schools from which returns were received offered both Physical Education I and Physical Education II. Although many schools have the facilities for both these programs, less than 20 per cent are availing themselves of Physical Education II.

Only three schools averaged as much as five standard periods per week in physical education. Yet authorities consider five periods as a minimum.

None of the schools devoted more than half of the periods to the actual teaching of basic physical education skills. Most schools

seemed to consider participation the chief aim. Rarely was a planned outline used in the teaching and practice of basic skills.

Only fourteen schools divided pupils into classes on the basis of some classification system. While it is recognized that small schools cannot easily divide their few pupils, the larger schools could well do so in terms of some approved organization.

Fifteen schools had developed co-educational programs of six weeks or more, nine of four or five weeks, six of three weeks, seven of two weeks. The remainder had done little or nothing in this regard. The chief co-educational activities were dancing and general recreation, with obviously little attempt at adapting team sports for joint participation by boys and girls.

Qualification of teachers

Thirty-three schools indicated that no staff member had improved his qualifications for teaching physical education from 1945 to 1953. In 41 schools, however, one or more staff members had been interested enough to improve their qualifications during the same period.

Some Standards in Physical Education

While there is no absolute agreement among authorities as to standards, the following are generally agreed upon.

Equipment and Supplies

LaPorte[7] states that from four to eight basketballs should be available for a class of 40 pupils. Similarly an adequate number of footballs, soccer balls, softballs, volleyballs, hockey sticks, etc., should be supplied for the efficient operation of team games. Equipment should also be had for some of the following: archery, badminton, golf, handball, horseshoes, paddle tennis, table tennis, tennis, shuffleboard, darts, various table and card games.

Facilities and services

LaPorte is again the authority for stating that athletic fields should be provided with areas suitable for all forms of field games and various kinds of court games. For instructional purposes as much space is required for a school of 50 students as for one of 500 students. Each school should have a battery of from eight to ten court units for each of the individual or dual activities to ensure satisfactory class instruction. A battery of this size would accommodate as many as 40 students. Modification in teaching techniques and class arrangement into larger groups reduces the need for facilities, but the effectiveness of the instruction is thereby reduced.

[7]LaPorte, **op. cit.**

A fair estimate of minimum ground area in the senior high school is from ten to fifteen acres. Heavy turf is the ideal surface for large areas.

The College Physical Education Association[8] reports that areas and equipment for baseball, football, golf, lacrosse, soccer, tennis, track and field activities should be made available in addition to other field areas for class instruction and intramural sports.

Blair's[9] extensive study of facilities includes standards or criteria generally approved by leaders in physical education. For gymnasia, his general rule is that the dimensions should be 50 by 80 feet if fewer than 500 students are enrolled. Table IV gives the minimum recommended gymnasium dimensions for schools of various size. Separate gymnasiums for girls and boys should be provided where possible; where not, the main floor area should be divisible into two units.

TABLE IV

RECOMMENDED GYMNASIUM SIZE

Enrolled	Width	Length	Height
0-150	46′	80′	18′
151-500	50′	85′	20′
501-900	60′	90′	22′
901-over	70′	100′	22′

Other recommendations made by experts include the provision of a swimming pool, together with adequate shower, locker, storage and dressing areas to handle peak loads of classes.

General program

In addition to the basic program, there should be a carefully administered but not too extensive program of intramural and inter-school athletics, with all students participating in the activities.

Conclusions

Real progress in physical education in Alberta has been made during recent years. More gymnasiums have been built, more information is being made available to teachers, more teachers are striving to improve their qualifications, and school boards are becoming more aware of the importance and need of physical education.

[8]The College Physical Education Association, **College Facilities for Physical Education, Health Education and Recreation,** pp. 2-96.

[9]Herbert Blair, **Physical Education Facilities for the Modern Junior and Senior High Schools,** pp. 12-53.

Comparison of Alberta standards with those just indicated, however, suggests that the Alberta situation is still very unsatisfactory.

Equipment and facilities

An indication of the inadequacy here is that only five of the 74 schools had gymnasium floor areas approaching minimum standards. A further indication is that 33 schools had no tumbling or apparatus work. Such limitations are especially serious in Alberta, where the winter weather is severe and pupils are often restricted to indoor classes. School boards must assume responsibility for this situation.

Participation

The fact that the schools surveyed had less than 40 per cent of the pupils participating in regular physical education classes indicates a serious lack of facilities or of awareness of the need for physical education. The fact that so few schools offer Physical Education II may mean that many teachers do not feel qualified to teach this subject.

Program and organization

Eighty-one per cent of the schools had physical education periods of 40 minutes or less. Very few schools used the double period. Longer periods are required to permit showering and dressing following the activity. Recommended health rules are often overlooked in the rush of getting to the next class.

Only three schools adhered to the suggested five periods per week in physical education. This requirement could be met regardless of facilities if school administrators were aware of it and planned the program accordingly.

Authorities in physical education hold the view that most of the period should be devoted to teaching and practising the fundamentals. Obviously most teachers have not accepted this view. They appear to feel that what matters most is "playing the game."

More than half the schools devoted two weeks or less to individual or dual activities. In an approved program these activities take up one-fourth of the entire course. It would appear that teachers are unaware of the important role of carry-over activities in the program.

Perhaps the greatest deviation from recommended standards was in program planning. Testing and measuring scales for different activities were not made available to teachers. Reference material was scanty. A flexible monthly, weekly, and daily schedule was

seldom employed. Most teachers were not aware of the time allocation for each of the activities. Further, the sequence for teaching various fundamentals was unknown to most of them.

Intramural and interscholastic programs, on the other hand, were active and well conducted in many schools. Desirable forms of social living were encouraged. Still more could be done in this valuable part of the program, with more of the staff encouraged to participate.

Recommendations

1. Supplementary literature should be made available to all school administrators, giving information about program planning, setting down an approved program, and suggesting alternate and sample programs flexible enough for use in various school situations.

2. Periodic meetings should be called by administrators to ensure a complete and coordinated program.

3. Administrators should inform school boards of recommended standards for facilities in physical education.

4. A higher standard should be required of teachers. If additional training at the university level is not feasible, in-service training should be carefully planned and instituted.

5. Supervisors trained and experienced in physical education should be available to assist administrators in improving the program, and to conduct demonstration classes for in-service training.

6. Continued surveys in physical education should be carried out to assess needs and progress. It is suggested that the writer's score card be improved and again used in a future survey, and that a standard score card be developed for Canadian schools.

BIBLIOGRAPHY

Blair, H. F. *Physical Education Facilities for the Modern Junior and Senior High Schools.* New York, A. S. Barnes, 1938.

Brace, D. K. *Health and Physical Education for Junior and Senior High Schools.* New York, A. S. Barnes, 1948.

College Physical Education Association. *College Facilities for Physical Education, Health Education, and Recreation.* Jackson's Mill, W. Va., 1946.

Davis, E. C. *Methods and Techniques Used in Surveying Health and Physical Education in City Schools.* New York, Columbia University Press, 1932.

Erikson, A. W. *A Survey of Physical Education and Health in Representative One-room Schools of Alberta.* Unpublished Master's thesis, Department of Physical Education, University of Washington, 1943.

Hughes, R. L. *A Survey of the Physical Education Programs in the Secondary* Schools of Greater Victoria, British Columbia Area. Unpublished Master's Thesis, Department of Physical Education, University of Washington, 1946.

Jonason, C. J. *A Survey of School Grounds, School Plant and Teacherage Conditions in Eighty Schools Situated in Central and Northern Alberta.* Unpublished Master's Thesis, Department of Arts and Science, University of Alberta, 1940.

LaPorte, W. R. *The Physical Education Curriculum.* Los Angeles, The University of Southern California Press, 1947.

McCloy, C. H. *Tests and Measurements in Health and Physical Education.* New York, Appleton-Century-Crofts, 1954.

McLachlin, H. J. *A Survey of the Physical Education Curriculums, Facilities and Administrative Organizations in the Senior High Schools in the Cities of the Province of Alberta, Canada.* Unpublished Master's thesis, Department of Physical Education, University of Washington, 1952.

Panton, J. H. *A Survey of Men's Intramural Programs in the Secondary Schools of Manitoba, Saskatchewan, Alberta, and British Columbia and a Suggested Plan for Organization in Secondary Schools.* Unpublished Master's Thesis, Department of Physical Education, University of Washington, 1948.

Participants in the National Facilities Conference. *A Guide for Planning Facilities for Athletics, Recreation, Physical and Health Education.* New York, Appleton-Century-Crofts, 1949.

Watkin, J. F. *Extracurricular Activities in Alberta High Schools.* Unpublished Master's Thesis, Department of Arts and Science, University of Alberta, 1938.

Williams, J. F. and Brownell, C. L. *The Administration of Health and Physical Education.* Philadelphia, W. B. Saunders Company, 1946.

POST-SCHOOL OCCUPATIONS OF ALBERTA 1949 HIGH SCHOOL GRADUATES WITH UNIVERSITY ENTRANCE STANDARDS

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Problem and Purpose of the Study

What becomes of those students who graduate from our high schools with sufficient requirements to attend the University of Alberta? How many are kept from further study by financial limitations? What portion of our graduates leave the province to study at other universities and colleges in Canada and the United States? How successful are the products of our high schools in their first year at university?

These and similar questions have long been of concern to Alberta educators. To aid in answering them, the authors decided to investigate the various paths taken by our high school graduates after graduation, and the factors influencing their decisions. More specifically they undertook to provide, for a given year, information about the following:

1. The proportion of high-school graduates entering the University of Alberta, and to:
   (*a*) Record the faculties entered and any change of faculty during, or immediately following, the freshman year,
   (*b*) Determine the number of casualties at the University of Alberta during the first year of study,
   (*c*) Compare the scholastic standings obtained in the Department of Education grade XII examinations with the final first year results obtained while in attendance at the University of Alberta.
2. The proportion of high school graduates not entering the University of Alberta immediately, and to ascertain:
   (*a*) The number attending other accredited universities and their reasons for attending universities outside of Alberta,
   (*b*) The number not attending any accredited university and their reasons for non-attendance,

(*c*) The number of persons receiving specialized training not associated with an accredited university,

(*d*) The occupational status of those not attending a university,

(*e*) The standings obtained in the Department of Education grade XII examinations.

Sample and Procedure

The population selected for this study was made up of students who graduated from Alberta high schools during the school year ending 1949, and who obtained a High School Diploma with at least "B" standing in seven grade XII subjects required for entrance into the University of Alberta. No limit was imposed in terms of the restrictive minimum average required by some faculties, nor of the length of time necessary to complete the grade XII course. Thus each of the students was a possible candidate for entrance to some faculty of the University for the winter session of 1949. Using the above criteria, 821 students were selected as the total population. These students were separated into two groups—the University of Alberta group and the Questionnaire group.

The University of Alberta group consisted of those students from the total population who enrolled in the winter session at the University of Alberta, at Mount Royal College (restricted to courses recognized by the University of Alberta), and in the Faculty of Education one-year course at the University of Alberta. A total of 422 students fell into this category.

For the remaining 399 of the total population no evidence could be found of registration in the University of Alberta or its affiliates. This group formed the tentative Questionnaire population.

A copy of the questionnaire, with a business reply envelope, was sent to the address of the student as recorded in the Department of Education files. The return was slighly above 50 per cent: usable replies were received from 201 individuals. These respondents constituted the final Questionnaire group. All of the data on this group was obtained from the questionnaires.

Findings — University of Alberta Group

Enrolments

An examination of the first year registration at the University of Alberta and its affiliates for the 1949-50 session showed a total of 1,137 freshman students enrolled in full or part-time programs. As indicated above 422 of these were matriculation graduates from Alberta high schools in 1949.

The faculties selected by the members of the University of Alberta group, together with the total first year enrolment in each of the faculties, are shown in Table I.

TABLE I

REGISTRATION OF FRESHMAN STUDENTS IN 1949-50 FACULTY PROGRAMS SHOWING PERCENTAGE OF 1949 MATRICULATION STUDENTS IN EACH AND PROGRAM SELECTION OF 422 MATRICULANTS

Faculty Program	First Year Total Enrolment	Number of 1949 Matriculants	Per Cent of 1949 Students	Per Cent of 422 Matriculants, 1949
1. Junior Elementary and Intermediate	427	82	17.9	19.4
2. B.Sc.—Engineering	144	76	52.8	18.1
3. B.Sc.—Arts	98	60	61.3	14.2
4. B.Sc.—Medicine	60	42	70.0	10.0
5. B. Education	106	35	33.0	8.3
6. B. Arts	63	34	54.0	8.7
7. B.A.—Law	35	26	72.2	6.1
8. B.Sc.—Nursing	35	21	60.0	5.0
9. B.Sc.—Dentistry	21	13	61.8	3.1
10. B.Sc.—Household Economics	24	13	54.1	3.1
11. B. Commerce and B.A., B. Commerce	37	10	27.0	2.3
12. B.Sc.—Agriculture	32	7	21.9	1.6
13. B.Sc.—Pharmacy	25	3	12.0	0.7
Total	1,137	422		

It is interesting to note that only 37.1 per cent of the 1,137 first year registrants at the University of Alberta for the 1949 - 50 session were persons who had graduated from the Alberta high schools in 1949. In only two faculties did the 1949 matriculation graduate constitute more than 70 per cent of the enrolment. The three students who entered the School of Pharmacy were able to enrol directly from high school, presumably because they had completed the required internship while finishing their matricula-

tion (all three had taken five or more years to complete high school). The low percentage of matriculants enrolled in the Junior Elementary and Intermediate Certificate program, the Bachelor of Education program, and the B.Sc. in Agriculture program may be attributed to less rigid entrance requirements which increased the proportion of non-matriculation students in these programs.

High school averages

The average mark made by a student on the seven grade XII subjects required for senior matriculation is probably roughly representative of his academic ability. However, one must consider that in arriving at this average only the highest mark in each subject was recorded. No account was taken of the fact that one-third of the 422 students repeated one or more of their grade XII subjects.

Table II indicates the grade XII averages of matriculants in the 13 faculty programs. Although the majority of the averages in each faculty came near the mean of 69.1 per cent, students enrolled in medicine, dentistry and pharmancy fell noticeably below the average for the total population. (See also Table III.) In terms of high school averages, it is evident that the degree course in the Faculty of Education attracted students of higher academic ability than did the Junior Elementary and Intermediate program.

Progress in University

Of the total University of Alberta group of matriculants starting the 1949 - 50 session, only 408 completed the full term. Seven members of the group withdrew before completing the year, four members had permission to defer their final examinations, and the remaining three students were engaged in only a partial course. Of the 408 students completing their first year 279 (68.4 per cent)[1] passed all of their courses, 92 (22.5 per cent) failed one or more subjects but were granted permission to write supplemental examinations, 17 (4.2 per cent) were recommended to Category II, and 20 (4.9 per cent) were recommended to Category IV.[2]

Table III presents a comparison of the University record of 412 matriculants in the various faculty programs with the record of all first year students in the same programs at the University of Alberta during the 1949 - 50 session.

1Including nine students who were recommended to transfer from the faculties of Law, Medicine and Dentistry even though they failed no subjects.

2In Category II the student is recommended to withdraw. If he decides to return, he is permitted no summer session registration and no supplementals; is not promoted, and is placed on "probation". "40" courses taken as first year courses remain first year courses.

In Category IV the student is required to withdraw from the University. If he is later allowed to return, he is on probation and is required to repeat the year, including those courses in which Departments reported passes.

TABLE II

GRADE XII AVERAGES OF 422 MATRICULANTS IN THIRTEEN FACULTY PROGRAMS

Faculty Program Entered 1949-50 Session	Number of 1949 Matriculants	Average of Grade XII Marks
B.Sc.—Nursing	21	71.3
B.Sc.—Engineering	76	71.1
B.A., LL.B. and Pre-LL.B.	26	70.9
B.Sc.—Agriculture	7	70.9
B.Sc.—Household Economics	13	70.7
B.Sc.—Arts	60	70.6
B. Education	35	69.1
B. Arts	34	68.8
B.Sc., M.D. and Pre-M.D.	42	67.1
B.Sc., D.D.S. and Pre-D.D.S.	13	66.8
Junior Elementary and Intermediate	82	65.6
B. Commerce and B.A., B.Com.	10	65.1
B.Sc.—Pharmacy	3	60.6
AVERAGE TOTAL OF POPULATION		69.1

Of the 422 matriculants attending the University of Alberta, 50 per cent completed grades X, XI, and XII in three years. Approximately 45 per cent completed high school in four years and the remaining five per cent required five or more years to graduate from high school with matriculation. Whether or not the length of time required to complete high school operated as a factor in university success is indicated in Table IV.

The obvious conclusion is that students who complete high school in minimum time show academic ability superior to those requiring five or more years to complete matriculation. The difference between the three and four year groups is less marked.

Table III

COMPARISON OF UNIVERSITY RECORDS OF 412 MATRICULANTS IN VARIOUS FACULTY PROGRAMS WITH TOTAL FIRST YEAR STUDENTS ENTERED IN SAME PROGRAMS

Faculty Programs Entered 1949-50	Per Cent Passing all Courses		Per Cent Recommended to Category II		Per Cent Recommended to Category IV		Per Cent Failing to Receive credit for Complete Year on Final Examination*	
	Total 1st Yr. Group	1949 Mat's	Total 1st Yr. Group	1949 Mat's	Total 1st Yr. Group	1949 Mat's	Total 1st Yr. Group	1949 Mat's
Jr. E. and I.	71.8	86.6	1.3	0.0	1.8	0.0	25.1	13.4
B.Sc.—Engineering	40.0	42.1	9.2	13.2	15.1	9.2	35.7	45.5
B.Sc.—Arts	52.8	58.3	7.3	3.3	13.0	5.0	26.9	43.4
B.Sc., M.D. and Pre-M.D.	56.3	50.0	9.4	4.8	3.1	0.0	31.2	45.2
B. Education	53.0	74.3	2.4	2.8	7.2	5.7	37.4	17.2
B.A.—Arts	59.0	67.2	5.6	0.0	6.8	5.8	27.7	27.0
B.A., LL.B. and Pre-LL.B.	66.0	76.9	2.8	3.8	8.3	3.8	22.9	15.5
B.Sc.—Nursing	80.0	85.7	3.6	0.0	0.0	0.0	16.4	14.3
B.Sc. and Pre-D.D.S.	40.4	38.5	0.0	7.7	26.1	7.7	33.5	46.1
B.Sc.—Household Economics	70.0	84.6	3.8	0.0	0.0	0.0	26.2	15.4
B.Com. and B.A., B.Com.	43.0	70.0	0.0	0.0	18.2	20.0	38.8	10.0
B.Sc.—Agriculture	68.0	85.7	2.7	0.0	2.7	0.0	26.6	14.3
B.Sc.—Pharmacy	44.0	0.0	3.2	0.0	12.5	66.7	40.3	33.3

*Includes students who were granted supplementals, deferred finals, etc.

TABLE IV

UNIVERSITY SUCCESS OF 422 MATRICULANTS AS RELATED TO LENGTH OF TIME TO COMPLETE MATRICULATION

Degree of Success	3 years		4 years		5 years	
	Number of Cases	Per Cent of Cases	Number of Cases	Per Cent of Cases	Number of Cases	Per Cent of Cases
Passed all	143	67.8	127	66.5	9	45.0
Failed one or more but granted supps	48	22.8	38	19.9	6	30.0
Recommended to Cat. II	9	6.6	7	9.9	1	20.0
Recommended to Cat. IV	5		12		3	
Withdrew	3	.....	3	.....	1	.....
Deferred Finals	2	2.8	2	3.7	0	5.0
Partial Students	1	.....	2	.....	0	.....
Total	211	100.0	191	100.0	20	100.0

Summary

Of the 821 students who graduated from the Alberta high schools in 1949 with University matriculation, 422, or 51 per cent enrolled in the 1949 - 50 session at the University of Alberta and its affiliates. The investigation sought to determine the activities and achievements of these students in their freshman year and to clarify the factors which influenced their achievements. The data reveal the following:

1. The 1949 matriculants comprised only 37 per cent of the freshman registration at the University of Alberta.

2. The Faculty of Education attracted 28 per cent of the 422 matriculants into the degree and certification program. All faculties except Engineering, Arts and Science, and Medicine attracted less than ten per cent each.

3. Of the female matriculants who entered the University of Alberta, 49 per cent chose teacher-education programs. Of the 254 male matriculants entering the University of Alberta, 45 per cent chose either Engineering or Science programs.

4. The programs in Arts, Medicine, Dentistry, Commerce, Pharmacy, and the Junior Elementary and Intermediate Certification program in the Faculty of Education attracted matriculants whose group grade XII averages were below the average of 69.1 per cent for the 422 matriculants.

5. As a group, the 422 students who matriculated in 1949 had a better academic record than the total group of students who were classified as first-year students in 1949 - 50. However, the 1949 matriculants registered in Medicine, Dentistry and Pharmacy failed to achieve the same standard as the total first-year class in those programs.

6. In 97 per cent of the cases, students who obtained an "H" grading on the grade IX examinations completed high school in the minimum of three years and had a higher average in the seven grade XII subjects than did students obtaining an "A" or "B" rating in grade IX.

7. Students requiring only three years to complete high school obtained a higher grade XII average and repeated fewer subjects than students who completed high school in four or more years.

8. Students requiring only three years to complete high school achieved a greater degree of success in their freshman year at the University than students requiring four or more years.

Findings — Questionnaire Group

The Questionnaire group, consisting of 399 individuals and yielding 201 replies, was divided into seven sub-groups for analytical purposes. The categories were as follows:

1. Other University—those who entered other accredited universities in Canada and the United States.

2. Nursing—those who entered the nursing profession as trainees (not including those who entered the degree program at the University of Alberta).

3. Pharmaceutical Intern—those serving pharmaceutical internship prior to entering the School of Pharmacy at the University of Alberta.

4. Secretarial Training—those who were undergoing or who had completed a secretarial course.

5. Miscellaneous Training—those who were taking further training of some description but who did not fit into any of the previously mentioned groups.

6. Employed—those who entered the workaday world directly.

7. Unclassified—all those not attending the University of Alberta and not replying to the questionnaire.

Influences favoring matriculation

Members of the Questionnaire group were asked what motivating factors were the most important in influencing them to complete their matriculation. "Individual desire" or "own choice" was mentioned 97 times. "Desire to continue to university" was indicated 72 times. "Parental influence" was mentioned in 47 cases, "teacher influence" in 26, "no other choice available in school program" and "other reasons" in five. It should be pointed out that an individual was free to indicate two or more factors if he felt that they were of equal weight.

Financial considerations

In 46.3 per cent of the cases it was indicated that financial difficulties prevented individuals from attending a university or college. Six additional persons pointed out that they selected universities or colleges outside the Province of Alberta because it was financially advantageous for them to do so. Scholarships, cheaper accommodation, and shorter courses were some of the reasons given for selecting post-high school training away from Alberta. In all, 99 persons deferred further training at the University of Alberta because of some degree of financial burden. If this trend were true for the entire 399 senior matriculants in the Questionnaire population, it might be assumed that approximately 197 persons of the total year's matriculants (or 49.4 per cent) did not proceed to further study at the University of Alberta because of some financial handicap.

TABLE V

PREFERRED FINANCIAL ASSISTANCE OF 78 MATRICULANTS

Type of Assistance	Number of Indications
A scholarship of $200	9
Free tuition	20
Free room and board	32
An interest-free loan	17
Part-time work	21
Other assistance	3
Total	102

A total of 78 persons expressed opinions as to the preferred type of assistance which would enable them to attend the University of Alberta. These opinions are shown in Table V. Equal preference for two or more types of assistance gave a total of 102 choices.

Intention of further study

In fifty-two cases (25.9 per cent of the total) it was indicated that the respondents definitely planned to attend the University of Alberta within the two-year limit set by the questionnaire. In twenty-four additional cases (11.9 per cent) it was indicated that they might enrol in the University within the two-year period. Eighty-six (42.8 per cent) indicated that they did not receive sufficient information about the University of Alberta while attending high school.

Academic achievement

A summary of grade XII marks by sex and total population for various categories is given in Table VI.

TABLE VI

AVERAGE OF GRADE XII MARKS FOR GROUPS NOT ATTENDING UNIVERSITY OF ALBERTA

Group	Male	Female	Total
Other University	70.5%	69.6%	70.2%
Nursing	.....	66.3%	66.3%
Pharmaceutical Intern	64.8%	63.8%	64.4%
Secretarial training	71.0%	67.3%	67.5%
Miscellaneous training	68.4%	65.7%	67.4%
Employed	66.5%	66.6%	66.6%
Unclassified	65.2%	66.4%	65.8%
Total—Non U. of A. population	66.4%	66.6%	66.5%

It is of interest to note that the average of the grade XII marks for the total Questionnaire population is 66.5 per cent, 2.6 per cent lower than the average of the grade XII marks for the total University of Alberta population. The grade XII average of the Pharmaceutical Intern group is 3.8 per cent higher than that of those students who enrolled in the School of Pharmacy directly from high school in 1949. Students who enrolled in the B.Sc. program of nursing at the University of Alberta immediately

following matriculation in 1949 had an average grade XII standing of 71.3 per cent as compared with 66.4 per cent for the Nursing group in the Questionnaire population. Of the 399 students in the total Questionnaire population, 125 had individual grade XII averages above the 69.1 per cent grade XII average of the total University of Alberta population.

Recommendations

1. That the University of Alberta maintain records of the sources of freshman registration so that enrolment may be more accurately anticipated each year.

2. That the factors of grade IX rating and the years required to complete high school be given consideration in assessing the suitability of the matriculant for university training.

3. That a program of entrance selection be adopted to choose those students most likely to meet restrictive minimum average as established in such faculties as Law and Medicine.

4. That the University of Alberta and the Department of Education promote a scheme of public relations which will encourage more students with university matriculation to come to university.

5. That some form of assistance be provided for matriculants who have the ability for university work, and that this form of assistance involve:

(*a*) Reduction of the cost of room and board through work performed by the matriculant at the University.

(*b*) Interest-free loans to likely prospects.

(*c*) An approved scheme of scholarship assistance.

6. That the University of Alberta adopt a more vigorous campaign to attract potential students in competition with industry, trade schools, business colleges, and other training institutions in the post high school development of our youth.

AN ANALYSIS OF THE EDITORIAL TREATMENT OF EDUCATION IN THE ALBERTA PRESS

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Editorial opinions and policies are important in education. The editorial columns of our newspapers both mold and reflect the public will, upon which the continuing function of education is dependent.

An understanding of editorial opinion should help educators to get a clearer view of public attitudes toward their aims, their methods, and their problems. The result should be a finer definition of the issues on which there is disagreement or misunderstanding between educator and layman, thereby enabling workers in the schools to offer a clearer public interpretation of their function. A better informed public and press would then be in a position to offer more wholesome and constructive criticism.

The material for the present study was obtained by examining the editorials of the six daily newspapers of the province—*The Calgary Albertan, The Calgary Herald, The Edmonton Bulletin*[1], *The Edmonton Journal, The Lethbridge Herald, The Medicine Hat Daily News*—during a period of five years, from January 1, 1946, to December 31, 1950. All editorials on education were classified in order to make possible a description of the volume and nature of the comment.

Volume of Comment

In the six daily newspapers, representing approximately 64 per cent of the total circulation in the province,[2] the editorials on education numbered 883 in five years. This number constitutes about three per cent of all editorials on all topics during this period in these newspapers.

Is this an adequate share of attention to education? The question is, of course, relative to the many problems clamoring for public attention. But if education is as important in the lives of our people as editors attest in their columns, editorial attention to education seems meagre enough.

Nature of Comment

Table I indicates the frequency of mention of the major topics in each newspaper. Higher education, and educational costs and

[1]This newspaper has now ceased publication.
[2]**Canadian Almanac and Directory,** 1950, p. 773.

finance rank ahead of the rest in popularity with editors. Four of the six newspapers allotted the largest portion of their space to higher education, while the other two showed educational finance at the head of the list.

Is the editorial treatment of education favorable or unfavorable? Only in matters of finance and curriculum does the amount of adverse comment outweigh that which is favorable. On the whole, the press is clearly striving to stimulate maximum efficiency in education.

TABLE I

FREQUENCY OF DISCUSSION OF MAJOR TOPICS IN SIX ALBERTA NEWSPAPERS, 1946-1950

Topic	CH	CA	EB	EJ	MHDN	LH	TOTAL
Higher education	23	29	50	120	6	28	256
Finance	17	15	7	19	29	38	125
Curriculum	10	15	17	17	19	20	98
Teachers	16	13	34	25	0	9	97
Methods, procedures	6	6	12	21	16	10	71
Administration	6	18	5	14	5	5	53
Adult education	1	1	14	21	9	5	51
Buildings, plant, equipment	3	3	6	17	3	17	49
Vocational education	7	1	5	4	8	12	37
Value (purposes, efficiency) of education	7	2	2	5	3	6	25
Pupils	3	0	4	1	4	2	14
Extracurricular activities	1	2	1	1	1	1	7
TOTAL	100	105	157	265	103	153	883

NOTE: CH-Calgary Herald; CA-Calgary Albertan; EB-Edmonton Bulletin; EJ-Edmonton Journal; MHDN-Medicine Hat Daily News; LH-Lethbridge Herald.

Several questions of great concern to educators are, however, largely ignored. Promotion policies, education method, sex education, treatment of controversial issues in the classroom, provision for individual differences, guidance and counseling, student interests

and needs, business education, health services, and specific school subjects receive scant attention in editorial columns. The neglect of these and other areas of educational endeavor in editorial discussion suggests a lack of information on what the schools are trying to do. So does the obvious lack of sympathy for some of the activities included in the curriculum, the lack of recognition given to public school adiminstrators, and the common editorial misconception that the schools have forgotten the "three R's." From this it follows that there is a need for some method whereby newspaper editors and the public at large can learn what the schools are doing, or are failing to do, about many things.

Higher education

In sheer quantity the editorial comment on higher education exceeds that on any other topic, although much of it tends merely to repeat conventional views. The press of the province, while appreciative of university education, alleges that it is over-specialized. It is felt that too much emphasis is being placed on technical training with a consequent neglect of the cultural aspects of education. The university is reminded that its function is to educate, not merely to turn out skilled technicians. Editors vigorously urge a revision of higher education, with greater stress on the cultural or spiritual phases of learning so as to achieve a better balanced, more rounded education. They fail, however, to make any significant suggestions regarding course offerings.

Restrictions imposed by some faculties on the number and type of students that can be enrolled each year are disparaged by the daily newspapers of the province. They feel that a genuine need exists for all professional services, and that facilities should be expanded to overcome this deficiency. Professional groups which foster such restrictive practices are chastised.

The method of instruction at most universities comes under the scrutiny of some sections of the press who deplore the excessive note-taking it makes necessary. Uninterrupted addresses by professors and verbatim copying by students are criticized. It is suggested that professors who prepare their work on paper should have it mimeographed and distributed to the class in advance, so that the lecture period could be devoted to an elaboration or discussion of the prepared statement.

Editors are well aware of the need for universities to increase their revenue if they are to continue to fulfill their obligation to society. Generally, it is believed that the provincial government should come to the assistance of the University of Alberta by means of increased grants. Federal aid, however, is not considered

advisable because of the dangers of uniformity or restriction. Increased fees, though approved, are conceived as merely nibbling at the problem of increased costs. There is evidence of concerted effort to increase the number of scholarships available to deserving students. Governments, private individuals, business and industry are all urged to contribute so that no worthy students are deprived of a university education.

An expansion of university facilities is proposed. To the newspapers in the southern part of the province this means decentralization, with the establishment of a branch university in the south; to the northern newspapers it means the expansion of existing facilities. The nature of the extension of university facilities is the most controversial issue in higher educaton.

Of no small importance is the fact that in four of the six newspapers the favorite education editorial theme was higher education. Elementary and secondary education directly affect the lives of the vast majority of Alberta's citizens. Yet one-fourth of the total editorial comment on education has to do with university education.

The volume of comment on this topic may be the result of the more highly publicized nature of university activities. Public school administrators might well consider the value of increased attention to publicity in their field.

Finance

Of perhaps greater importance is the interest of the press in the money side of educational problems. The topic of educational finance not only ranks second in popularity with editors, but it also pervades their discussion of such subjects as teachers, school plants, and administration. It may be stated as a fact that the financial apects of education most often claim the attention of the press.

Editors point with considerable frequncy to the increasing expenditures on education, putting it in the class of big business. They are, on the whole, sympathetic toward the problem facing school authorities as a result of the rising cost of education, and are helpful to educators in presenting their problems to the public.

Re-examination of the methods of financing education throughout the province is urged. Editors are as one in deploring the ineffectiveness of present methods, and in claiming that the present tax base should be broadened to reduce the tremendous burden on property and to spread the load mor equitably. Governments are rebuked for their failure to assume their rightful responsibilities by paying a much greater portion of the cost of education. It is urged that since education is a matter of concern to the state as a

whole, its availability should no longer be limited by the taxable capacity of separate areas.

Thus the press is insistent that the provincial government pay at least fifty per cent of the cost of education. It attempts to arouse the public to condemn the inequitable distribution and paucity of present government grants. Federal aid, while highly favored in the realm of technical education, is thought to be restrictive. In general public education as in higher education, some editors are wary of the uniformity and control they believe to be implicit in the application of federal aid. Others believe we have nothing to gain from it, as the people of Alberta are capable of accomplishing just as much by themselves.

Editors cannot agree on the financial implications of the County Act. In some quarters it is felt that the county system should be given a trial to see if it will reduce costs, while in others there is the conviction that education would suffer even greater privation under such a regime.

The support of education in the press is obviously genuine, and based on a secure conviction of educational values. Often there is a penetrating analysis of financial problems, and vigorous support for genuine reform. Editors appear to be familiar with what careful students have learned about educational finance, and are placing the issues squarely before the public.

School boards

Editors recognize the difficulty of the tasks confronting school boards, and as a rule commend them for meeting their responsibilities in an exemplary manner. There is strong tendency to support the sovereign rights of school boards whenever they are threatened. At the same time, anything suggesting the abuse of independence, and anything resembling secrecy or lack of responsiveness to the public will is seriously scored by certain editors.

The divergence of opinion about the financial aspects of the County Act is repeated with reference to administration as such. One newspaper feels that it will make for more efficient operation; others protest dangers of centralized control and financial vulnerability. The press generally opposes the County Act, believing it to be a real threat to educational efficiency and freedom.

Administrators

The treatment of education in the Alberta press suggests that the administrative group in our schools have failed to impress newspaper editors, at least, with their leadership. There are several editorial references to administrators, but practically all of them

are to the heads of institutions of higher learning. References to these persons indicate a respect for them as leaders in the life of the province. No such regard for public school administrators is evident.

The almost complete lack of editorial comment on the latter may be the result of failure on the part of editors to recognize the valuable nature of the services rendered by public school administrators. Or it may be owing, in part, to the very nature of the public school administrator's duties which, when performed satisfactorily, do not occasion public interest. It may also be explained in terms of the possibility that administrators of the public schools have failed to be as useful or as influential as they could have been. Whatever the cause, the sobering fact is that the work of principals and superintendents does not seem to have made much impression on newspaper editors. Public school administrators might well pause to examine their activities in an effort to determine why this is so.

Teachers

If newspaper comment reflects the public's attitude toward the personnel of schools, it must be acknowledged that the general feeling toward teachers is good. Their essential position in a democratic civilization is recognized, and their rights as individuals jealously defended.

The press, at any rate, consistently urges an increase in teachers' salaries to a level commensurate with the importance of their job. Seldom do editors imply that the salaries of teachers are at all adequate. Apparently teachers have convinced editors, if not school boards, of the legitimacy of their salary demands. Some editors do, however, distinguish between the salary paid to the real professional and that paid to the inexperienced or inept teacher. It is suggested that the inexperienced and inept often stand in the way of those who are entitled to professional rating and higher salaries.

Present low salaries are viewed as the crux of the educational problem throughout Canada, and as being directly reflected in the existing teacher shortage. The opinion is commonly expressed that the solution to problems of teacher shortage and teacher status is to be found by increasing salaries to the point where more stringent requirements for entrance into the profession can become operative.

Unanimity also exists on the teacher training issue. The press is convinced that teaching is an arduous task requiring intensive preparation and consummate skill. As a result it is extremely critical of any attempts to decrease the amount of basic training

required by teachers. A period of at least two years, but preferably more, is strongly advocated.

Although a genuine friendliness for the teacher is revealed in this investigation, certain editors appear somewhat reluctant to grant teachers the professional status to which they aspire. This hesitancy is based not only upon the belief that the general calibre of the teaching body is unworthy of such recognition, but that the procedures by which teachers solve their problems are not always those associated with a profession. The feeling is that many of the teachers' problems are of their own making, resulting from their failure to organize themselves into a truly professional body and set up their own standards.

Expansion of education

Editors insist on equality of opportunity in education. Thus they fully support the expansion programs being undertaken at all levels of our educational system. Belief in the decentralization of educational facilities is evidenced by a vociferous demand by newspapers in the southern half of the province that a branch university and a school of agriculture be established in that area.

Vocational education

While preferring a "cultural" curriculum, editors recognize the merits of vocational education to bridge the gap between school and life. They urge reorganization of the program in vocational education, with more schools for technical training strategically placed throughout the province.

Adult education

The press is remarkably alert to the possibilities of adult education. Of significance is the conviction that the school should assume a major role in providing recreational and educational leadership for the community as a whole. The opinion that the school should not be restricted to the traditional task of training the young is a direct challenge to educators to broaden the scope of the educational program, and to make the school a more powerful and direct influence for the betterment of life in the whole province.

Curriculum

In the attitude of the press toward the curriculum, two points are outstanding. First is the attention given to this topic: the sheer volume of comment shows that what is taught in the schools is of great interest to editors. The second is the prevailing lack of understanding of the nature and purposes of many of the elements criticized. Most editors seem not to appreciate the factors which enter into modern curriculum planning.

Numerous editorials question the efficiency of the curriculum, claiming that school graduates lack competence in fundamental processes, and questioning the political, social, and economic leadership provided for the province by its schools. Attacks are launched at "progressive education," at "fads and frills." A return to "the fundamentals" is recommended. Editors tend to deplore the widening of subject fields, to condemn specialization, and to attack educators for becoming "too practical." From the primary grades to university they propose a mental-discipline concept of education designed to provide what is thought to be a well-rounded education. Provision for individual differences among students is frequently regarded as soft pedagogy.

It is evident that traditional views of education are firmly held by editors. If educators are to gain support for more modern views, they must launch a program to acquaint the public with the motives underlying the changes in Alberta's educational system during the past two decades.

Suggestions to Educators

There are apparent relationships between educational policy in this province and the opinions expressed in the editorial columns of Alberta newspapers. In 1946 the press violently opposed a bill introduced in the legislature giving the Minister of Education control over school board secretary-treasurers. The bill was withdrawn. Increasing financial contributions to education by the government have always been strongly urged by editors. The establishment of the Calgary Branch of the University of Alberta, and recent curriculum revisions designed to improve mastery of the "three R's" are in accordance with editorial points of view.

It would, of course, be unsound to generalize broadly from the above examples. The government shelved its proposal to shorten the teacher-training program in 1946, but implemented a similar proposal in 1954. The opposition of the press was not less vigorous in 1954 than in 1946.

Nevertheless it does appear that editors succeed in reflecting and directing public opinion about education to a significant degree. Their statements must therefore be of concern to educators, since education is a public function. Workers in the schools might well profit from constant and careful perusal of opinions expressed in newspaper editorials.

With the findings of this study in mind, the following suggestions are offered to educators for their consideration:

1. That, since education is dependent upon the public will for its continuing function, they cultivate an awareness of the public

viewpoint on education, and that newspaper editorial columns be examined as one indication of the public viewpoint.

2. That steps be taken to disseminate accurate information to the public about educational aims, curriculum, and methods.

3. That preparatory to the introduction of new educational policies, new courses of study, new methods, or any new project, the public be adequately informed of their purposes in an effort to enlist its support.

4. That the school endeavor to make itself a continuing and influential part of the ordinary life of Alberta by assuming greater responsibility for adult education.

5. That the teaching body take action to make itself truly worthy of higher status by increasing the calibre of its members, establishing its own standards, and adopting a still more professional attitude toward the solution of its problems.

6. That educators, particularly administrators, improve their status by launching a program designed to acquaint the public with the value of the services they render.

Editorial

It will be apparent to readers of the *Journal* that the studies reported herein have been of diverse initiation and sponsorship. There have been rewrites of significant masters' theses completed during the last few years. There have been reports on investigations carried out as masters' theses with the support of the research organization. There have been research studies as such by staff members and students in the Faculty of Education. There have been reports on research done outside the faculty in which staff members have participated with the approval of the Advisory Committee.

In the present issue Michael Skuba's analysis of English errors and difficulties is an example of a master's study as such. Climenhaga's study was completed in partial fulfilment of requirements for the master's degree, but it could not have been successfully completed without the various kinds of assistance afforded by the research organization. The Dunlop-Hunka-Zingle study is evidence of the value of cooperative endeavours on the part of staff and students, while Dorothy Lampard's investigation of spelling is an example of research by an individual staff member. Dr. Clarke's article on promotion policies shows the participation of a staff member in research initiated by the Department of Education.

It is to be expected that as time goes on the research studies in this Journal will be related less and less to masters' theses and more and more to projects initiated by the research committee. This is by no means to suggest that outstanding masters' theses will not be reported here. But it is to be expected that significant work at the master's level will have specific and increasing support from the research committee. Furthermore, with the development of lines of communication between the Faculty and various teacher, administrative, and other groups throughout the province, the committee is counting upon the development of field teams and organizations for research purposes. One good illustration of this sort of thing is a study of busing now being undertaken on a divisional basis. Another is a study of giftedness instigated by the School Trustees' Association. Some field studies will presumably be of the kind known as action research, but there is ultimately no reason why pure research should not develop as well.

It will be the policy of the Research Committee to indicate in future issues the nature of the research sponsorship—especially those projects undertaken specifically at instigation of and with the continuing supervision of the Research Committee.

INDIVIDUAL DIFFERENCES IN ALBERTA SCHOOLS

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Introduction

Educational research permits us to make periodic examinations of the educational 'facts of life.' This may prove a disturbing experience. However, facts are facts and must be faced. If we are doing everything we can to meet the situation the process need not be too painful. One of these educational facts is the matter of individual differences in our classrooms.

The existence of individual differences in ability and achievement has never been questioned. In any grade we know that Johnnie may be a very good reader and that May reads haltingly, with much lip movement, analysis and trial and error. Olive may be gifted in arithmetic, but Henry just does not seem to be making much progress. What parents and even teachers and principals find hard to accept is the extent of the differences in intelligence and achievement which exist within the walls of the ordinary classroom. With the development of standardized tests of achievement which express attainment as grade score, and first rate instruments for the measurement of intelligence, it is now possible to examine objectively the nature and extent of individual differences in our classrooms.

This report is written for all who are interested in Alberta education. It is for parents, for school trustees and members of home and school associations, as well as for teachers who already are familar with the facts reported. However, even teachers, principals and superintendents will read with interest the facts concerning Alberta children, if only for the reason that objective reporting and publication of facts concerning Alberta schools has not always been possible.

Let us begin by reporting the facts discovered in a survey of achievement in New York City. J. Wayne Wrightstone[1] made an analysis of reading achievement of 6,581 third-grade pupils in New

[1]J. Wayne Wrightstone, **Analysis of Intelligence and General Achievement in Third Grade Classes.**

York City. Twelve per cent did as well as or better than fifth grade pupils, while twelve per cent did worse than children at the grade II level. This represents a spread of at least five grades in reading achievement. 6,481 third grade pupils wrote the Stanford Achievement Spelling Test. Seven per cent did as well as or better than fifth grade pupils, while twelve per cent were below the grade II level—another spread of at least five grades.

In the same city Wrightstone[2] administered the Stanford Achievement Reading Test to 11,178 pupils in grade VII. In Paragraph Meaning the scores of 304 pupils reached or exceeded the grade XII level while 1,328 had scores at or below the level of grade V. This is a spread of at least eight grades. Wrightstone also found that, in 25,638 pupils tested in grade VIII reading, 577 pupils were at or below the grade IV standard while 420 were above grade XII or at college level, a spread of at least nine grades.

At this stage you may be saying: "But this is academic insanity! Have they no standards? The very idea of a spread of achievement of five grades in grade III or nine grades in grade VIII! That kind of thing might happen in New York or Oklahoma or Timbuctoo. It couldn't happen here!"

The excellent studies of intelligence and achievement in Alberta schools which already have appeared or will appear in this journal, and which were conducted under the direction of the Alberta Committee on Educational Research, furnish us with the data on individual differences which are required for a report parallel to that prepared by Wrightstone for New York City. We are indebted to Carmichael[3], to Reid and Conquest[4], and to Climenhaga[5] for the facts which follow.

Distribution of Intelligence in Alberta Schools

In planning the Reading-Language study, the committee in charge decided to use the California Short Form Test of Mental Maturity. In the companion study of arithmetic achievement, the Otis Quick Scoring Test of Intelligence was utilized. As a result we have two studies of the distribution of intelligence in Alberta children, one for grade VII, the other for grade VIII.

Table I analyzes the distribution of intelligence for Urban, Town, Graded Rural and Ungraded Rural samples. It also provides a

[2]J. Wayne Wrightstone, **Analysis of Results: Survey of Intelligence and Reading Ability in 7A Classes, Junior High Schools.**

[3]Anne Carmichael, "A Survey of Reading Achievement in Alberta Schools", **The Alberta Journal of Educational Research** (March, 1955), pp. 18-33.

[4]T. James Reid and George R. Conquest, "A Survey of the Language Achievement of Alberta School Children", **The Alberta Journal of Educational Research** (June, 1955), pp. 39-52.

[5]Clarence E. Climenhaga, **A Survey of Arithmetical Achievement of Grade VIII Pupils in Alberta Schools.**

combined distribution of 1,044 pupils. It is accepted that children of intelligence falling below 80 I.Q. are of necessity slow learners, and unlikely to make normal progress through our schools. In this study 3.92% or 41 children of the total sample are in this category. On the other hand 65 children or 6.21% have an I.Q. of 120 or above, a level of intelligence suited to training for the learned professions. These figures make evident how varied the population of our grade VIII classrooms must be. Actually the spread of intelligence in the Alberta grade VIII sample was I.Q. 61 to I.Q. 141, a range of 80 I.Q. points.

Table II was prepared from the data secured in the survey of achievement in reading and language in grade VII and is based on the California Short Form Test of Mental Maturity. The distribution resembles that in Table I. In this study 12.38% or 97 pupils are of I.Q. 120 or above, and 40 pupils or 51.1% are below I.Q. 80. The actual range of intelligence in the sample was from I.Q. 54 to I.Q. 137, a spread of 83 I.Q. points. Both studies reveal the tremendous differences in intelligence of children in both grade VII and grade VIII in Alberta Schools.

TABLE I

DISTRIBUTION OF I.Q. SCORES (OTIS) OF GRADE VIII PUPILS IN ALL TYPES OF ALBERTA SCHOOLS*

Grade Scores	Urban		Town		Graded Rural		Ungraded Rural		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
140-149	2	.5	0	0	0	0	0	0	2	.19
130-139	3	.8	2	.9	0	0	1	.5	6	.57
120-129	29	7.5	13	5.5	9	4.1	6	3.0	57	5.45
110-119	109	28.4	46	19.6	58	26.1	27	13.4	240	23.00
100-109	116	30.3	73	31.1	62	27.9	58	28.7	309	29.60
90- 99	87	22.6	63	26.8	62	27.9	56	27.7	268	25.68
80- 89	29	7.5	26	11.1	24	10.8	42	20.8	121	11.60
70- 79	9	2.3	11	4.7	6	2.7	11	5.4	37	3.54
60- 69	1	.3	1	.4	1	.5	1	.5	4	.38
TOTALS	385	100.2	235	100.1	222	100.0	202	100.0	1044	100.01

*After Climenhaga and Pritchard.

TABLE II

DISTRIBUTION OF I.Q. SCORES OF GRADE VII PUPILS IN ALL TYPES OF ALBERTA SCHOOLS*

Grade Scores	Urban		Town		Graded Rural		Ungraded Rural		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
130-139	11	5.6	4	1.8	0	0	3	1.6	18	2.30
120-129	40	20.2	22	10.0	7	3.9	10	5.3	79	10.08
110-119	44	22.2	57	26.0	36	20.0	24	12.8	161	20.54
100-109	49	24.8	35	20.5	55	30.5	41	22.0	190	24.23
90- 99	26	13.1	61	27.9	53	29.4	55	29.4	195	24.87
80- 89	19	9.6	20	9.1	21	11.7	41	22.0	101	12.88
70- 79	6	3.0	8	3.6	5	2.8	11	5.9	30	3.83
60- 69	2	1.0	1	.5	2	1.1	1	.5	6	.76
50- 59	1	.5	1	.5	1	.6	1	.5	4	.51
TOTALS	198	100.0	219	99.9	180	100.0	187	100.0	784	100.00

*After Carmichael, Reid and Conquest.

To show the range of intelligence within a single classroom, eleven randomly chosen grade VII urban classes containing 385 children were subjected to study. The classroom with the least spread of intelligence was from I.Q. 91 to I.Q. 128, or 37 I.Q. points. The classroom with the greatest variation was from I.Q. 79 to I.Q. 141, or 62 I.Q. points. The average range in intelligence per classroom was 52 I.Q. points. While the spread in the individual classrooms was understandably less than in the total sample, it emphasizes the range of ability which the classroom teacher will meet in the ordinary single grade room.

Distribution of Achievement in Reading

The information shown in Table III was secured in the Alberta survey of achievement in reading and language. In this study the California Reading Test—a part of the California Achievement Test, was employed.

In this and later sections of this report grade scores will be used. Grade scores are frequently expressed as follows. The number to

the left of the decimal designates the grade, while the number on the right of the decimal indicates month in the grade. The grade scores show the performance of the average pupil for each year and month. For example, a grade score of 8.3 is the score made by the average pupil in the third month of grade VIII. When a pupil's test is marked, the total raw score obtained is found in the table of scores, and the equivalent grade score is secured from an adjacent column. Grade scores have the advantage of being more meaningful than raw scores as they indicate the grade level attained by each pupil taking the test. If the obtained grade score is higher than the pupil's actual grade placement, you recognize his work as satisfactory. If his grade score is lower than his grade placement his work is regarded as unsatisfactory. For example, a pupil who is in his third month in grade VII may secure a reading grade score of 8.5. We recognize that he is doing satisfactory work in reading. We also realize that he is 12 school months ahead of his actual grade placement in reading. Please note that there are ten months in the school year.

TABLE III

DISTRIBUTION OF GRADE SCORES IN READING ACHIEVEMENT OF GRADE VII PUPILS IN ALL TYPES OF ALBERTA SCHOOLS

Grade Scores	Urban		Town		Graded Rural		Ungraded Rural		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
10.0-10.9	23	11.6	15	6.8	5	2.8	7	3.7	50	6.4
9.0- 9.9	37	18.9	45	20.3	31	17.5	20	10.6	133	16.9
8.0- 8.9	46	23.3	69	31.2	46	25.6	32	16.9	193	24.5
7.0- 7.9	58	29.5	51	23.0	66	36.7	61	32.3	236	30.0
6.0- 6.9	23	11.7	35	15.8	26	14.5	52	27.5	136	17.3
5.0- 5.9	5	2.5	5	2.3	6	3.3	14	7.4	30	3.8
4.0- 4.9	5	2.5	1	.5	0	.0	3	1.6	9	1.1
TOTALS	197	100.0	221	99.9	180	100.4	189	100.0	787	100.0

In this report the reader need not be concerned over whether the test norms are too high or too low. Our concern is that they express attainment in grade scores which permit a study of individual differences in achievement.

In Table III, we note that 787 grade VII pupils range in grade score from 4.5 to 10.8, a spread of over six grades. Of the total, 50 pupils or 6.4% have reached the grade X level while 4.9% or 39 pupils are below the grade VI level.

When we compare the subsamples for the Urban, Town, Graded Rural and Ungraded Rural children little difference in range of grade scores appears. Even the Urban sample, which proved superior to the others in average reading score, had as wide variability as any of the other samples.

But you may ask, 'What is the variation or spread in reading achievement in the ordinary classroom?' To answer this question eleven Urban grade VII classes with a total population of 346 pupils were randomly selected. The average enrollment was 35 pupils. The classroom with the smallest spread of reading scores had a range of 3.8 grades; the highest was 6.7 grades. The average range of reading achievement expressed in grade scores was found to be 5.0 grades.

Distribution of Language Scores

In this survey of reading and language achievement the California Language Test was used. Table IV presents the distribution of scores for 776 grade VII children composing the Urban, Town, Graded Rural and Ungraded Rural subsamples.

The range of language grade scores extends from 3.8 to 12.5, a spread of 8.7 grades with pupils working at 10 grade levels. 143 children or 18.4% of the total were at or above the grade X level while 72 pupils or 9.2% were at or below the grade VI level.

Again only slight differences in range were discovered between the Urban, Town, Graded Rural and Ungraded Rural samples.

In order to assess the variability of grade scores in individual classrooms, eight Town classes were randomly selected for the study. The total population of these eight classrooms was 219. The classroom with the least variability had a range of 3.7 grades, while the classroom with the greatest variability had a range of 5.8 grades. The average range per classroom was 4.6 grades.

TABLE IV

DISTRIBUTION OF GRADE SCORES IN LANGUAGE ACHIEVEMENT OF GRADE VII PUPILS IN ALL TYPES OF ALBERTA SCHOOLS

Grade Scores	Urban		Town		Graded Rural		Ungraded Rural		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
12.0-12.9	2	1.0	1	.5	0	.0	1	.6	4	.5
11.0-11.9	6	3.0	3	1.4	1	.5	1	.6	11	1.4
10.0-10.9	42	21.3	44	20.0	30	16.1	12	6.9	128	16.5
9.0- 9.9	49	25.0	65	29.4	57	30.6	41	23.4	212	27.3
8.0- 8.9	50	25.5	63	28.8	58	31.2	57	32.5	228	29.4
7.0- 7.9	32	16.3	30	13.6	27	14.5	32	18.3	121	15.6
6.0- 6.9	9	4.6	12	5.4	12	6.5	24	13.7	57	7.3
5.0- 5.9	5	2.6	1	.5	0	.0	6	3.4	12	1.5
4.0- 4.9	1	.5	0	.0	0	.0	1	.6	2	.3
3.0- 3.9	0	.0	0	.0	1	.5	0	.0	1	.1
TOTALS	196	99.8	219	99.6	186	99.9	175	100.0	776	99.9

Distribution of Achievement in Spelling

Part of the Alberta survey of language achievement was the measurement of spelling attainment by means of an effective spelling scale which is part of the California Language Test. The data resulting from the study are presented in Table V.

The spelling test was administered to 777 grade VII pupils. Their scores range from grade 4.0 to grade 13.5, a spread of 9.5 grades. Eighty-eight pupils or 11.3% were at or above the grade XI standard, while 9.9% or 77 pupils were below the grade VII standard. No meaningful difference appeared in the distributions of the Urban, Town, Graded Rural and Ungraded Rural samples. Apparently the wide range in spelling achievement was as marked in the Urban and Town samples as it was in the Rural.

To examine the individual differences in spelling to be expected in a single classroom, eleven Urban grade VII classes of 340 pupils were randomly selected for the study. The lowest range in an

individual classroom was 3.6 grades, and the highest was 7.8 grades. The average range of achievement in spelling in the individual classroom was 6.0 grades.

TABLE V

DISTRIBUTION OF GRADE SCORES IN SPELLING ACHIEVEMENT (CALIFORNIA LANGUAGE TESTS) OF GRADE VII PUPILS IN ALL TYPES OF ALBERTA SCHOOLS*

Grade Scores	Urban		Town		Graded Rural		Ungraded Rural		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
13.0-13.9	2	1.0	1	.5	.....	.....	2	1.1	5	.6
12.0-12.9	4	2.0	7	3.2	2	1.1	1	.5	14	1.8
11.0-11.9	29	14.8	17	7.8	17	9.1	6	3.4	69	8.9
10.0-10.9	40	20.2	43	19.6	40	21.5	28	15.9	151	19.4
9.0- 9.9	41	20.9	58	26.5	48	25.8	32	18.2	179	23.0
8.0- 8.9	43	21.9	49	22.4	45	24.2	40	22.8	177	22.8
7.0- 7.9	23	11.8	27	12.3	20	10.8	35	19.9	105	13.5
6.0- 6.9	7	3.6	11	5.0	11	5.9	17	9.7	46	5.9
5.0- 5.9	3	1.5	5	2.3	3	1.6	13	7.4	24	3.1
4.0- 4.9	4	2.0	1	.5	.....	.....	2	1.1	7	.9
TOTALS	196	99.6	219	100.1	186	100.0	176	100.0	777	99.9

*After Reid and Conquest.

Distribution of Achievement in Arithmetic

In a sample of 1,045 Alberta grade VIII pupils tested on the Iowa Every Pupil test of achievement in arithmetic, the range of achievement was from grade score 4.8 to 11.5, or 6.7 grades. 196 pupils or 18.76% scored at or above the grade X level, while 158 or 15.11% scored below the grade VII level.

When the table is reviewed for evidence of systematic differences between the four subsamples, none are apparant. Excepting for a single pupil in the Urban sample who scored at the grade IV level the Urban, Town, Graded Rural and Ungraded Rural revealed the same spread in achievement.

TABLE VI

DISTRIBUTION OF GRADE SCORES IN ARITHMETIC ACHIEVEMENT (IOWA EVERY PUPIL TEST*) OF GRADE VIII PUPILS IN ALL TYPES OF SCHOOLS IN ALBERTA**

Grade Scorces	Urban		Town		Graded Rural		Ungraded Rural		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
11.0-11.9*	25	6.22	12	5.02	14	6.39	5	2.49	56	5.36
10.0-10.9	63	16.32	35	14.65	30	13.70	12	5.97	140	13.40
9.0- 9.9	91	23.57	59	24.69	39	17.81	32	15.90	221	21.15
8.0- 8.9	76	19.70	52	21.84	54	24.66	52	25.87	234	22.39
7.0- 7.9	88	22.80	51	2.34	52	23.74	45	22.36	236	22.59
6.0- 6.9	40	10.37	28	11.71	28	12.79	53	26.67	149	14.26
5.0- 5.9	2	.52	2	.83	2	.91	2	.99	8	.76
4.0- 4.9	1	.26	0	.00	0	.00	0	.00	1	.09
TOTALS	386	99.76	239	100.08	219	100.00	201	100.25	1045	100.00

*Test D—Form O. On the Iowa Test no norms are provided beyond the 11.0-11.9 interval.

**After Climenhaga and Pritchard.

In order to study the variations in achievement within the ordinary classroom, eleven Urban grade VIII classrooms were randomly chosen. These classrooms contained 386 pupils. Examination of the data showed that the smallest range of achievement in arithmetic in an individual classroom was 3.9 grades; the largest range was 6.2 grades. The average range per classroom was 5.0 grades.

Conclusions

To summarize the educational 'facts of life' concerning individual differences in Alberta classrooms certain conclusions are offered. They are trustworthy to the degree that sampling studies may be trusted. The inclusion of more classrooms and more children would unquestionably alter the findings. With that reservation in mind here are the findings.

1. In the Otis test the distribution of I.Q. scores of the 1,044 grade VIII children tested ranged from I.Q. 61 to I.Q. 141, a range of 80 I. Q. points.

2. On the California Short Form Test of Mental Maturity the scores of 784 grade VII pupils ranged between I.Q. 54 and I.Q. 137, a spread of 83 I.Q. points.
3. The average range of intelligence for eleven grade VIII classes was 52 I.Q. points.
4. The range of grade scores in reading achievement of 787 grade VII pupils was from 4.5 to 10.8, or 6.3 grades. The average range for the ten Urban classrooms studied was 5.0 grades.
5. In language the range of grade scores of 776 grade VII pupils was from 3.8 to 12.5, a spread of 8.7 grades. The average range within the eight classrooms studied was 4.6 grades.
6. In spelling the range of scores for the 777 grade VII pupils tested was from 4.0 to 13.5, a spread of 9.5 grades. When eleven classes were studied the average range of achievement was 6.0 grades.
7. The range of achievement in the arithmetic scores of 1045 grade VIII pupils was from 4.8 to 11.5, or 6.7 grades. The average spread of the eleven Urban classrooms studied was 5.0 grades.
8. No systematic differences appear to exist between Urban, Town, Graded Rural and Ungraded Rural children as far as range of ability or achievement is concerned.

As was stated at the outset, this is a report written for laymen. No effort at sophisticated treatment of the data has been made. Rather the intent is that the figures must speak for themselves. To assist them in becoming vocal these concluding observations are added. Your classrooms contain children whose intelligence ranges from that of the slow learner to that of the very superior child. In the average grade VII classroom the range of reading ability extends over five grades, in language over 4.6 grades, in spelling 6.0 grades. The range of arithmetic achievement in the average grade VIII classroom is over 5 grades.

It is known that children learn best working at or near their level of achievement, not at a level several grades above or below. The responsibility for meeting the wide differences in ability and achievement demonstrated to exist within the ordinary classroom is the burden borne by your teacher.

BIBLIOGRAPHY

Carmichael, Anne. "A Survey of Reading Achievement in Alberta Schools." *The Alberta Journal of Educational Research* I:1 (March, 1955), pp. 18-33.

Climenhaga, Clarence E. *A Survey of Arithmetical Achievement of Grade VIII Pupils in Alberta Schools.* Unpublished Master's Thesis, University of Alberta, 1955.

Reid, James T. and Conquest, George R. "A Survey of the Language Achievement of Alberta School Children." *The Alberta Journal of Educational Research* I:2 (June, 1955), pp. 39-52.

Wrightstone, J. Wayne. *Analysis of Intelligence and General Achievement in Third Grade Classes* (New York City), March-May 1949, Final Summary Report (typewritten copy). New York: Bureau of Reference, Research and Statistics, New York City.

Wrightstone, J. Wayne. *Analysis of Results: Survey of Intelligence and Reading Ability in 7A Classes,* Junior High Schools, February 1947, Final Summary Report (typed). New York: Bureau of Reference, Research and Statistics, New York City, March, 1948.

AN ANALYSIS OF ENGLISH ERRORS AND DIFFICULTIES AMONG GRADE TEN STUDENTS IN THE SMOKY LAKE SCHOOL DIVISION

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The Problem

For a number of years the superintendent of schools, the principals, and the teachers of the Smoky Lake School Division have been concerned about the final results in grade XII English. During the last twelve years the percentage of students scoring "B" or better on the departmental examination has ranged from a low of approximately 20 to a high of about 50, with the average percentage of passes below 35. This has been about 25 per cent below the provincial average. On the other hand the number of passes in other grade XII subjects on departmental examinations has been average or slightly above. Many students who were contemplating a university education have been delayed a year or two because they lacked matriculation requirements in English.

It is obvious that English language difficulties in the Smoky Lake Division are not limited to grade XII but apply throughout the grades. This is especially true of written work. Several attempts have been made, through the use of standardized tests, to compare results in the Smoky Lake School Division with norms supplied with the tests. Little has been done, however, to determine where the greatest weaknesses lie.

The purposes of the present study were (1) to discover the English errors most common in the schools of the Smoky Lake School Division, (2) to identify those which seem to cause the greatest difficulty, and (3) to suggest possible means for improving standards.

Procedure

The grade X students in the Smoky Lake School Division were chosen for study. The grade X students in the McLeod School Division were chosen as a comparison group on the assumption that English does not present the same problem to them that it does to pupils in the Smoky Lake Division.

The *Cooperative English Test, Single Booklet Edition, Higher Level, Form S,* was administered to all grade X students in the two divisions during the second week of December, 1954. This gave results for 110 students in the following centres of the Smoky Lake School Division:

Smoky Lake	35
Vilna	33
Waskatenau	17
Bellis	13
Warspite	6
Spedden	6

and for 94 students in the following centres in the McLeod School Division:

Claresholm	37
Fort McLeod	22
Granum	18
Stavely	17

After the test had been scored, the raw scores were converted into scaled scores[1]. Scaled scores made possible the comparison of each student's achievement on one part of the test with that of any other, as well as comparisons between the scores for each of the two groups of schools and the norms supplied with the tests.

Comparisons between the groups of schools were made on the basis of average scaled scores for each of the three tests as well as certain parts of the tests. Average scaled scores were obtained for vocabulary, speed of comprehension, level of comprehension, and total reading comprehension. Likewise average scaled scores were obtained for mechanics of expression, effectiveness of expression, and total English score on the three tests. Comparisons were also made for each part of the test of mechanics of expression: grammatical usage, punctuation, capitalization, and spelling. The test of effectiveness of expression gave part scores on sentence structure and style, active vocabulary, and organization. In the absence of scaled scores on these parts, comparisons were made on the basis of the average number of correct responses. Reference to the booklet of norms supplied with the tests made it possible to compare the scaled scores of students in the McLeod and Smoky Lake School Divisions wih the scores made by students in the United States.

All students' test papers from the Smoky Lake School Division were analyzed to determine the number of students who marked each possible response in each item. This gave the frequency with which certain types of errors had been made. The investigator tried, wherever possible, to ascertain the reason for the errors and to determine the probable difficulties of students in the Smoky Lake School Division.

[1]Units so scaled that the scores will tend to form a normal distribution. It is so defined that a score of 50 represents the score which an average child would make at the end of a particular course if he attended an average school and had taken an average amount of instruction.

Nature of the Tests

The *Cooperative English Test, Single Booklet Edition* is a combination of a reading skills test and two English skills tests (mechanics of expression and effectiveness of expression), brought together to permit in two hours of testing time a rather full analysis and diagnosis of English abilities at the high school level.

Test A: Mechanics of Expression contains 60 items of grammatical usage placed in sentences, together with 45 items of punctuation and 24 items of capitalization presented in running prose. Spelling is presented in 60 items, each a choice between a misspelled and a correctly spelled word. *Test B: Effectiveness of Expression* contains three parts. Part I measures sentence structure and style by requiring comparative judgments between passages of prose placed in parallel columns, and choices among four versions of similar sentences. Part II is a test of active vocabulary in which the student must guess the words intended by definition and by clues of the first letter and length. Part III measures organization by rearranging disorganized paragraphs and by completing a partial outline. *Test C: Reading Comprehension* contains two parts: vocabulary—meaning tested by five choices, one of which is a synonym of a given word; and speed and level of comprehension—understanding tested by responses to seventeen brief reading selections drawn from widely different sources (informational, scientific, and literary).

Perhaps the most unusual feature of the tests is that the 90 comprehension items are arranged in three repeating scales of equivalent difficulty, each containing 30 questions based upon four to eight paragraphs per scale.

While speed of comprehension[2] is measured by a count of the total number of items accurately answered, level of comprehension[3] is scored by counting only items of completed scales. This eliminates the influence of speed upon the comprehension score and makes it a better measure of power of comprehension than is obtained in other timed tests.

The authors of the test state:

> In the vocabulary section of the test the average correlation coefficient between individual items and the total score is .52. For the reading section it is .40. Because the more discriminatory items in the reading section tend to have been placed first in the test, those items which actually determine an individual's score tend to have an average validity index greater than these average values. This is a desirable feature of the test which operates to increase its accuracy of measurement . . . . .

[2]The **Speed of Comprehension** score represents the product of the rate at which an individual has attempted to comprehend the test material and his success in comprehending it. It is not, like many speed-of-reading scores, merely a measure of the number of words read without regard to the thought content.

[3]The **Level of Comprehension** score provides a measure of the ability of the student to comprehend materials of increasing difficulty at the rate at which he chooses to work. It is a measure of "power" or "depth" of comprehension, indicating the extent to which a pupil is able to grasp the full import of what he reads.

The value of the intercorrelations between the scores on Test A: *Mechanics of Expression,* Test B: *Effectiveness of Expression,* and Test C: *Reading Comphrension* indicates that these tests measure related abilities; the correlation between *Mechanics* and *Effectiveness* is .67, that between *Mechanics* and *Reading Comprehension* is .60, and between *Effectiveness* and *Reading Comprehension* is .74[4].

Bear[5] reports:

Reliability coefficients have been computed which show considerable stability at the 50 point of the scaled scores. These range from .82 for a level of comprehension with only one scale completed to better than .90 for vocabulary and total scores. For secondary and college groups, correlations of between .70 and .80 with intelligence tests have been reported, and of between .39 and .73 with school marks.

Analysis of Test Results

Comparisons of average scaled scores of the two groups of schools used in this investigation were made with norms based on the scores of 90,000 students in 200 schools of the Public Secondary School System of the East, Middle West, and West United States. Table I compares the seven types of measure for which scaled scores were available.

TABLE I

COMPARISION OF McLEOD AND SMOKY LAKE SCHOOL DIVISION SCORES WITH UNITED STATES NORMS

Type of Score	U.S. Norms		McLeod School Division Scores			Smoky Lake School Division Scores		
	Average Scaled Score	Grade Level	Average Scaled Score	Grade Level	Grade Difference	Average Scaled Score	Grade Level	Grade Difference
Vocabulary	45.3	10.4	48.3	11.2	+0.8	41.8	9.6	—0.8
Speed of Comprehension	45.5	10.4	49.2	11.5	+1.1	41.1	9.3	—1.1
Level of Comprehension	45.4	10.4	49.2	11.5	+1.1	42.4	9.7	—0.7
Total Reading Comp.	45.4	10.4	48.3	11.2	+0.8	40.6	9.3	—1.1
Mech. of Expression	44.9	10.4	42.3	9.7	—0.7	39.8	9.1	—1.3
Effectiveness of Exp.	44.5	10.4	45.1	10.5	+0.1	38.5	9.0	—1.4
Total English	44.2	10.4	44.5	10.5	+0.1	38.8	9.2	—1.2

[4]Geraldine Spaulding and W. W. Cook, **The Cooperative English Tests—Their Construction, Interpretation, and Use,** pp. 3-4.

[5]Robert Murray Bear, "Review of Cooperative English Tests", **The Third Mental Measurements Yearbook, 1940.**

TABLE II

DISTRIBUTION OF SCALED SCORES OF 110 STUDENTS IN THE SMOKY LAKE SCHOOL DIVISION BY GRADE LEVEL AND FOR VARIOUS LANGUAGE MEASURES

Grade Level	Vocabulary		Speed of Comprehension		Level of Comprehension		Reading Comprehension		Mechanics of Expression		Effectiveness of Expression		Total English	
	Range of Scores	Number of Students	Range of Scores	Number of Students	Range of Scores	Number of Students	Range of Scores	Number of Students	Range of Scores	Number of Students	Range of Scores	Number of Students	Range of Scores	Number of Students
7	-33	0	-34	0	-34	0	-34	11	19-35	33	24-34	27	-33	0
8	34-39	36	35-39	51	35-39	51	35-39	45	36-39	20	35-38	35	34-37	55
9	40-43	36	40-44	30	40-43	15	40-43	24	40-43	29	39-42	19	38-42	33
10	44-47	29	45-47	10	44-47	19	44-47	14	44-47	14	43-47	17	43-46	14
11	48-50	4	48-50	8	48-50	12	48-50	9	48-50	5	48-50	5	47-50	1
12	51-53	2	51-53	5	51-53	9	51-54	6	51-53	5	51-53	4	51-53	5
12+	54-	3	54-	6	54-	4	55-	1	54-	4	54-	3	54-	2

McLeod School Division scores were higher than those of the students used in establishing the norms in all measures except mechanics of expression. On the other hand, students in the Smoky Lake School Division were from seven months to one and one-half years below the norms.

Since the average scaled scores of students in the Smoky Lake School Division were below the norms and below those of the students in the McLeod School Division, it was considered desirable to determine the distribution by grade level of the students according to their achievement in each of the seven measures. Table II shows this distribution.

Sixty-five per cent of the grade X students in the Smoky Lake School Division had a vocabulary score which was below the norm for their grade as rated by the Cooperative English Test. For each of the other measures, the proportion of students below the norm was as follow: Speed of Comprehension, 74%; Level of Comprehension, 60%; Total Reading Comprehension, 73%; Mechanics of Expression, 75%; Effectiveness of Expression, 74%; and Total English, 80%.

Analysis of Errors and Difficulties

The analysis of test papers of the grade X students in the Smoky Lake School Division revealed the prevalence of the following problems:

1. Difficulty in distinguishing shades of meaning.
2. Confusion of meaning because of similarities in sound, appearance, or derivation.
3. Inability to read and comprehend with the rapidity indicated by norms for the grade.
4. Failure to detect the usage errors *had of* and *would of* in sentences.
5. Failure to distinguish correct uses of *who, whom,* and *which* in sentences.
6. Difficulties with tense, especially in longer sentences.
7. Difficulty in using the apostrophe.
8. Failure to capitalize words as names.
9. Spelling difficulties associated with careless pronounciation.
10. Difficulties in explaining judgment about superior and inferior sentences.

Conclusions and Suggestions

Grade X students in the Smoky Lake School Division were found to be unable to read rapidly enough to attempt many of the items within their range of comprehension. It would seem that much could

be done for those students who display obvious errors in the mechanics of reading by providing the opportunity for supervised oral reading of easy materials and by preparing simple exercises in word recognition, syllabication, and phonetic analysis. Stearn[6] gives these suggestions:

1. Start pupil reading *something.* Be sure it is not too difficult, but be even more sure it is interesting to him.
2. Encourage him to read better and better books, not by telling him they *are* better, but by suggesting them as interesting reading. Be *sure* they are interesting.
3. Give him plenty of practice with well-organized remedial materials. He can really improve if given a chance.
4. Keep him well informed of his progress, both in relation to his own past performances and to the performance of the class and the groups.
5. Don't ask him for "book reports." Let him spend the time reading instead.

Students need to be encouraged to do more reading at the level at which they now are. For those who have not developed a real taste for reading, good magazines could be used to advantage. Certain magazines appeal to young people regardless of age, sex, or intelligence. These include *MacLean's, Readers' Digest, The Saturday Evening Post,* and *Collier's.*

> Many teachers have reported classroom experiences with magazines which have resulted in improved reading tastes and extended reading interests on the part of high school youth. It seems clear that the reading tastes of American people could be materially altered for the better, particularly in the field of magazines, if all schools were to provide youth with the opportunity to become acquainted with the many good materials available.[7]

There is evidence of a need for systematic vocabulary development. It appears that many students have fairly large vocabularies but are not always precise in their choice of words. Devices such as word games, good crossword puzzles, and word competitions could be used to stimulate vocabulary development. The dictionary is an important aid in learning the correct meanings of words encountered in reading. But unless words are filled with the content of personal experience, they are likely to remain empty symbols in the mind of the learner and hence be misused or readily forgotten.

> Power to get meaning from the printed page begins with word recognition. In the elementary and junior high school, teachers should arouse an interest in words, their multiple meanings, and their varied forms. They should help pupils develop a method of attacking unfamiliar words through the many techniques of word analysis, pursuit of context clues, and the use of the dictionary. This requires ingenuity in devising activities that both interest and challenge children and young people. Emphasis upon first hand experiences as a basis for giving meaning to words is especially important.[8]

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[6]Gertrude B. Stearn, **English in the Small High School,** pp. 259-260.
[7]John J. DeBoer and others, **Teaching Secondary English,** p. 264.
[8]National Council of Teachers of English, **The English Language Arts,** p. 398.

The danger of teaching vocabulary without reference to the content of experience is great when new words are introduced in lists for memorization of spelling and meanings without reference to context or need. Growth in vocabulary should be a by-product of new experiences demanding the use of new words for describing, identifying, or communicating. From this background of experience, words whose pronunciation, meaning, or spelling cause difficulty may be lifted for special consideration as separate items, but the procedure in such cases is always from the whole to the part.

More time might well be devoted to the study of homonyms, verb tenses, the apostrophe, and good informal usage (including necessary distinctions between *who, which,* and *whom*). Practice should be based mostly upon the students' own speech and writing.

> There is probably no better way to waste time than to ask students to change sentences which they themselves would never think of writing or saying. Unless the students recognize the language of the practice exercises as their own, the carry-over of the work into their personal, independent use of the language is destined to be small because of their failure to see any connection between the two.[9]

The use of the double negative, formerly so prevalent among students of Ukrainian origin, has diminished considerably.[10] Double negatives seem logical to these students because they use them, and correctly so, in their own language. (It is quite common and proper to use sentences with four or five double negatives in Ukrainian.) However, it is apparent that students of Ukrainian origin are beginning to think in English rather than compose in Ukrainian and translate into English.

Spelling appears to require some attention. Correct pronunciation would do much to eliminate many spelling errors among the grade X students in the Smoky Lake School Division. Correct pronunciation is a habit rather than a subject, and hence cannot be achieved as a unit boxed off for a few week's intensive study. The alternative is to make improvement in pronunciation a "continuous responsibility in all classes and an integral aspect of all oral work."[11]

Students need constant practice in the use of parallel construction to express parallel ideas. They need practice also in writing different sentence types. The ability to handle sentences well results from a gradual maturing of ability to think, to organize ideas, and to express ideas. The attack of the school strategically follows the natural stages of language development: (1) thinking and expressing single ideas, (2) thinking and expressing several

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[9]John J. DeBoer and others, **op. cit.**, pp. 91-92.

[10]See D. M. Sullivan, **An Investigation of the English Disabilities of Ukrainian and Polish Students in Grade IX, X, XI, and XII of Alberta Schools,** and C. H. Robinson, **A Study of the Written Language Errors of 1,238 Pupils of Ukrainian Origin.**

[11]John J. DeBoer, **op. cit.**, p. 109.

ideas, and (3) expressing ideas more interestingly through the use of a variety of sentences. Particular attention should be given to longer sentences with a view to avoiding unjustified partial sentences, run-on sentences, and poor sentence arrangement. The goal should be to incorporate good sentences in written and spoken English.

Above all, there is a need for a desire to improve. Practice on difficulties is one thing. Using effective expression in written and spoken English is another: it can come about only through a willingness to raise the standard of effective English in everyday practice.

BIBLIOGRAPHY

Buros, Oscar K., ed. *The Third Mental Measurements Yearbook.* New Brunswick, Rutgers University Press, 1940.

Buros, Oscar K., ed. *The Fourth Mental Measurements Yearbook.* London, Gryphon Books Limited, 1953.

Dawson, Mildred A. *Teaching Language in the Schools.* New York, World Book Company, 1951.

DeBoer, John J. and others. *Teaching Secondary English.* New York, McGraw-Hill Book Company, 1951.

Gibeault, J. L. *The Effect of Instruction in French upon the Mastery of the English Language in the English-French Schools of the St. Paul Inspectorate.* Unpublished M. A. Dissertation, University of Alberta, 1939.

Gurrey, Pervical. *The Teaching of Written English.* London, Longmans Green and Company, 1954.

LeBrant, Lou. *We Teach English.* New York, Harcourt Brace and Company, 1951.

National Council of Teachers of English. *The English Language Arts.* New York, Appleton-Century-Crofts, 1952.

Reid, T. J. and G. R. Conquest. "A Survey of the Language Achievement of Alberta School Children." *The Alberta Journal of Educational Research* I: 2 (June, 1955), pp. 39-52.

Robinson, C. H. *A Survey of the Written Language Errors of* 1,238 *Pupils of Ukrainian Origin.* B.Ed. Dissertation, University of Alberta, 1934.

Spaulding, Geraldine and W. W. Cook. *The Cooperative English Tests—Their Construction, Interpretation and Use.* New York, Cooperative Test Service, 1950.

Stearn, Gertrude B. *English in the Small High School.* Lincoln, University of Nebraska Press, 1950.

Sullivan, D. M. *An Investigation of the English Disabilities of Ukrainian and Polish Students in Grade IX, X, XI, and XII of Alberta Schools.* M.Ed. Dissertation, University of Alberta, 1946.

Tidyman, W. F. and Marguerite Butterfield. *Teaching the Language Arts.* New York, McGraw-Hill Book Company, 1951.

PROMOTION PRACTICES AND POLICIES IN ALBERTA SCHOOLS

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The Problem

Learning theory states that children learn school subjects best when taught "at the point of error." Economy dictates that in our public schools children shall be taught in groups or classes. The psychology of individual differences demonstrates widely different rates of growth in ability to learn school subjects. These three stubborn facts indicate the basic difficulties which must be faced in determining what grouping at what curriculum level is best for a given pupil. Policies range from those requiring complete mastery of subject matter at a grade level, through continuous promotion (one year equalling one grade), to progress through the grades at varying speeds.

In 1952 the Department of Education appointed a committee to study and to report on promotion policies and practices. This committee (J. G. Woodsworth, S. C. T. Clarke, H. Hamilton, F. W. Wooton, O. P. Larson, C. Safran, W. H. Worth, E. Read, and A. B. Evenson) studied the problem in the following stages:

1. Promotion practices and policies elsewhere (including other Canadian provinces, the U.S.A., European countries, Great Britain, Australia, and New Zealand).
2. Promotion practices and policies in Alberta schools.
3. Research evidence on the effects of different practices.

Afer the results of the above investigations had been considered, further steps were planned, as follows:

4. A study of parents' views on promotion practices and policies.
5. Recommended promotion policies adapted to varying conditions.

The committee decided that it was desirable to poll all Alberta teachers (including principals) of grades I - VIII to ascertain what students they intended to promote, and what beliefs and reasons they could give for these intentions as of June, 1954.

Method

A carefully prepared questionnaire was used to determine Alberta policies and practices. A deliberate effort was made to secure good motivation on the part of the participating teachers.

Anonymity was assured, and the questionnaire was designed for machine scoring.

The writer was assigned the task of preparing the first draft of the questionnaire. He asked a small number of teachers to write on two topics: reasons why they failed students in the past, and promotion policies they believed in or disagreed with. He also read the available literature. The first draft was then prepared and revised with the assistance of three colleagues. The second draft was tried out on seven teachers and revised according to these limited findings. The third draft was examined by a subcommittee and revisions were suggested. The fourth draft was mimeographed (200 copies) and tried out in a pilot run with the teachers (about 150) of two school divisions. The results were examined by the committee as a whole and further revisions were suggested. The fifth draft was prepared for printing, and included a major reorganization of the form of one table. The sixth and seventh drafts were refinements of the galley proofs, with adjustments for machine scoring. The eighth draft was distributed to the teachers and principals through their superintendents.

In an attempt to secure good motivation on the questionnaire teachers and principals were informed of the intended use of results. The superintendents had allowed time at their annual conference for an examination and explanation of the mimeographed form of the questionnaire. They undertook to distribute it, and to do what they thought most suitable to encourage teachers to complete it accurately.

Anonymity was insured by supplying a self-addressed envelope (address, W. E. Frame, Chief Superintendent of Schools). Attention was drawn to the fact that the questionnaire asked for neither the name of the school nor of the teacher.

Returns

There were 3,133 replies. On an estimate of 4,400 individuals teaching one or more grades of the grade I - VIII range, this gives a 56 per cent return. The 3,133 teachers had 80,649 pupils enrolled. On an estimate of 163,867 pupils enrolled in grades I - VIII in June, 1954, this gives a 49 per cent return.

Findings

Each of the following questions, together with the responses, deals with a major aspect of the questionnaire.

With whom is the promotion of individual pupils discussed by teachers?

(*a*) "With other teachers"—1,294 teachers reported (39.87% of the possible 3,133).
(*b*) "With the principal"—2,039 teachers (65.08%).
(*c*) "With the staff, in a staff meeting"—686 teachers (21.90%).
(*d*) "With the superintendent"—1,291 teachers (41.21%).
(*e*) "With none of the above"—278 teachers (8.87%).

It should be noted that any teacher might check more than one of the above. 537 of the 3,133 teachers were in one-room schools. Most of these would have, perhaps, only the superintendent to discuss promotions with; hence the relatively high proportion of responses under (*d*). It is clear that teachers do discuss promotions.

How is the final decision about promotions made?

(*a*) "Is entirely up to me"—494 teachers reported (15.77% of the 3,133).
(*b*) "Is made by me only after consultation with the principal or superintendent"—890 teachers (28.41%).
(*c*) "Is made by me, with special cases referred to principal or superintendent"—1,685 teachers (53.78%).
(*d*) "Is made by me, after consultation with principal and staff in agreement with a promotion policy adopted"—638 teachers (20.36%).
(*e*) "Is made by principal or superintendent after consultation with me"—150 teachers (4.79%).

These data support the conclusion that, with the exception of approximately 16 per cent of teachers reporting under (*a*) above, the final decision is made after consultation or confirmation, where this is possible.

What are the practices for conditional[1] *promotions?*

(*a*) Total number of pupils received and recognized as conditional promotions in September, 1953—2,111.
(*b*) Number of the above demoted for unsatisfactory performance —314 (14.87% of the 2,111).

The obvious conclusion is that, for the majority, conditional promotions are promotions.

When are parents informed of failure?

(*a*) "During the term, by interview or letter"—2,000 teachers reported (63.83% of the 3,133).

[1]**Conditional** here means that, subject to satisfactory performance, the child remains promoted; otherwise he is set back to the preceding grade.

(b) "By successive weak gradings during the term"—2,079 teachers (66.36%).

(c) "When the student takes home his June report card"—442 teachers (14.11%).

Since many teachers quite logically checked all three, it is clear that the general practice is to inform parents early of the possibility of failure.

How many superior students were given accelerated promotions during the year (at times other than June)?

338 students were so promoted. Since the teachers were in charge of 80,649 pupils, the percentage of acceleration during the term was 0.42.

How many students for reasons of age or social adjustment were promoted during the year (at times other than June)?

335 students were so promoted, a percentage of 0.41.

What promotion policies do teachers believe sound?

The results are presented in Table I, with policies arranged in general order of preference by teachers.

Since teachers were instructed that policies not checked "characterized neither your own belief nor school policy," the number checking the policy, less the number stating disagreement in the third column, indicates its support by teachers. It can be taken that the first four policies are supported by at least two-thirds of the 3,133 teachers, while the last four are supported by rather less than one-third of the 3,133 teachers.

It is clear that most elementary teachers in Alberta favor promoting a child if he has already repeated a grade. The majority view is that a child should be promoted unless there is clear evidence that non-promotion will be more likely to favor his all-round development.

On the other hand, it would seem that the Alberta elementary school teachers polled do not favor social or chronological promotions. In short, they favor a requirement of achievement standards.

What did the teachers intend to do about promotions in June, 1954?

The results are given in Table II. The number of students listed in each case is the number the responding teachers intended to fail or promote conditionally.

TABLE I

TEACHER BELIEFS ABOUT STUDENT PROMOTIONS

Policies	Number and Per Cent of Teachers checking Each Item			Total
	Policies I believe sound.	Policies which I believe sound and which characterize my school.	Policies which seem to be school policy but which I do not believe in.	
The child is failed only if it appears that he will profit by repeating the grade	656 23.3%	2,056 72.8%	107 3.9%	2,819 100%
No child is retained in any grade longer than two years	399 14.8%	2,004 74.3%	293 10.9%	2,696 100%
No child is to be held back unless holding him back will improve his adjustment	597 24.4%	1,704 69.8%	140 5.8%	2,441 100%
A child is promoted if there is evidence that he is working up to his measured capacity to learn	685 30.4%	1,405 52.5%	158 7.1%	2,248 100%
Minimum standards are set which students must meet in order to be promoted	564 32.2%	1,066 60.7%	124 7.1%	1,754 100%
Border-line pupils are conditionally promoted to the next grade	506 26.7%	1,119 59 %	271 14.3%	1,896 100%
In deciding promotions, we place emphasis increasingly from grade I to grade VIII in the importance of achievement in subjects	336 23.3%	955 66.1%	152 10.6%	1,443 100%
We fail students if their marks are below passing in certain major subjects	333 23.3%	937 65.6%	159 11.1%	1,429 100%
We permit the student to fail not more than one in each Division (Division I is grades I-III; Division II is grade IV-VI)	206 13.5%	969 64 %	348 22.5%	1,523 100%
The pupil must not get out of his social group	399 28 %	744 52.3%	279 19.7%	1,422 100%
If the child does his best, no matter how low his achievement, he is promoted	336 36.3%	389 41.9%	202 21.8%	927 100%
Chronological age is the main factor in determining promotion (i.e., one year equal one grade)	24 7.6%	76 24 %	216 68.4%	316 100%

TABLE II
NON-PROMOTION GRADES

Grade	Enrolment June 20th	Number to be Failed	Per Cent to be Failed	Conditional Promotions	Per Cent of Conditional Promotions
I	14,289	927	6.5	497	3.5
II	11,582	641	5.5	512	4.4
III	10,252	592	5.8	575	5.6
IV	10,118	537	5.3	524	5.2
V	9,923	560	4.6	558	5.6
VI	9,186	406	4.4	471	5.2
VII	7,918	470	5.9	594	7.5
VIII	7,380	354	4.5	356	4.8
TOTAL	80,649	4,387	5.4	4,087	5.1

The grade enrolments decrease from grade I through grade VIII. This decrease is the result of two important factors: first, the diminishing impact of the increased postwar birth rate on enrolment from grade I on; second, the retardation, over-ageness and dropping-out produced by the approximate 5 per cent failure in each grade. It should be recognized that if no pupil were failed more than once, on the basis of the above figures 43.5 per cent of all children starting grade I would fail one grade between grades I and VIII. This appears to be a very serious implication of the above figures. Are more than 40 per cent of Alberta grade IX pupils repeaters? How many are failed more than once? Sampling studies on these problems are indicated.

It is clear that the teachers who replied intended to use conditional promotions widely. If the 15 per cent subsequently demoted were added to the above figures, the total failure as of June - September would be 4,387 plus 15 per cent of 4,087, which gives a figure of 5,000 or 6.2 per cent of the total 80,649. On this basis, if no pupil is failed more than once, approximately 50 per cent of all children starting grade I would fail one grade between grades I and VIII inclusive.

The grade I failure rate is highest. However, if conditional promotions are included as failures, the grade VII rate is highest. Administrators may want to ponder the causes and implications of these two highest rates.

Comparing the number of accelerations reported by these teachers (338 because of superior ability plus 335 for reasons of age and social adjustment, a total of 673) with the number of retardations (4,387 plus the estimated 613 of the conditionally promoted pupils who will be set back, a total of 5,000) it is clear that over-ageness or retardation is developing in the Alberta schools as a result of promotion practices. For every child accelerated, seven are retarded.

The above figures are based on a partial return. How reliable are they? Evidence of retardation is given by McManus[2] in his M.Ed. thesis: he found at the grade IX level 2.2 per cent of pupils accelerated and 37.8 per cent retarded. The Department of Education's Annual Report,[3] however, does not indicate this kind of retardation. It is possible to compare the estimated 1,816 failures in grade I with a figure from the 1954 Annual Report of the Department of Education:[4] in June, 1954, there were 1,742 repeaters from the preceeding year. This means that 1,742 were failed in June, 1953. In June, 1953, the enrolment in grade I was 25.353, indicating a failure rate of 6.8 per cent in grade I. Our estimated failure rate for June, 1954, is 1,816 out of 27,939, or 6.5 per cent. But one should add the estimated number of conditionally promoted and subsequently demoted, indicating a failure rate of 7.0. Since the general trend of failure rate in grade I over the past years has been a decline, it is concluded that the figures presented in this study for grade I, and possibly for the other grades, are slightly high as statements of number or percentage failure.

What reasons did teachers give for failing students?

The reasons related to subject matter are presented in Table III.

This table makes it possible to compare the importance attached by teachers to weakness in various subjects, in any grade or across the grades. Obviously, reading is of paramount importance in grade I and declines in importance to grade VIII: 786 students out of 927 (84.8%) to be failed in grade I were especially weak in reading. Arithmetic retains uniform position as a cause of school failure. Why spelling should be given so frequently as a reason for failure in grades II and III may give administrators pause. The increasing emphasis on social studies through the grades is a clear trend.

2Thomas M. McManus, "A Survey of Pupil Progress in Edmonton City Schools," M.Ed. thesis, University of Alberta, 1950.

3Alberta Department of Education, **Forty-eighth Annual Report,** p. 116 (Table 9).

4Alberta Department of Education, **Forty-ninth Annual Report,** p. 125.

TABLE III

SUBJECT WEAKNESS OF STUDENTS TO BE FAILED

Reason	Number and Per Cent of Failures							
	I	II	III	IV	V	VI	VII	VIII
Reading	786 84.8%	555 86.6%	455 76.9%	392 73.0%	328= 71.3%	248 61.1%	282 60.0%	167 47.2%
Arithmetic	615 66.3%	359 56.0%	353 59.6%	331 61.6%	310 67.4%	264 65.0%	323 68.7%	242 68.4%
Language	396 42.7%	435 67.0%	397 67.1%	378 70.4%	323 70.2%	262 64.5%	366 77.9%	238 67.2%
Spelling	239 25.8%	514 80.2%	448 75.7%	385= 71.7%	320 69.6%	238 58.6%	269 57.2%	152 42.9%
Social Studies	144 15.5%	146 22.8%	197 33.3%	262 48.8%	282 61.3%	216 53.2%	347 73.8%	212 59.9%
NUMBER FAILED	927	641	592	537	460	406	470	354

Note: Any student may be failed for more tha none reason.

What other reasons are given for failing students?

The results are summarized in Table IV. The reasons cover general reference to school subjects, work habits, and the like.

The first six reasons refer mainly to inability to meet standards, the next five to motivational factors, while the remainder are not readily classifiable although it would appear that three of them are motivational also. Except for "Was at the bottom of the class" and "Showed poor study habits," the items are in order of frequency.

Of the total 4,387 pupils whom teachers intended to fail, for 3,568 the reason was "Would not be able to handle next year's work." It seems clear that in practice teachers fail students mostly on the basis of lack of mastery of academic subjects.

TABLE IV.

ADDITIONAL REASONS FOR FAILING STUDENTS

Number	Per Cent of 4,387	Reason
3,568	81.3%	Would not be able to handle next year's work.
3,310	75.5%	Had not mastered year's work.
2,573	58.7%	Another year would give him a good foundation to go on.
2,250	51.3%	Was below class standard.
2,058	46.9%	Is a slow learner; hence remaining in the grade would leave him closer to his level of achievement.
1,665	38.9%	Was at the bottom of the class.
1,774	40.4%	Showed poor study habits.
1,445	32.9%	Was inattentive.
1,174	26.8%	Was lazy, did not try.
1,036	23.6%	Was working far below potential.
880	20.1%	Needed to be shown that effort is required to get through school.
663	15.1%	Had poor attendance.
498	11.4%	Had a bad attitude.
496	11.4%	General interest and ability to get along with others below grade level.
466	10.6%	Had foreign language difficulty.
459	10.5%	Was disturbed by conditions in the home (death, separation, quarrelling, poverty, crime).
455	10.4%	Was sickly, lacked energy.
408	9.3%	Was small for his age.
307	7.0%	Was a trouble-maker.

Note: Any student may be failed for more than one reason.

Summary

1. Approximately 50 per cent of the teachers of grade I - VIII pupils completed the questionnaire. On the basis of two check points, total years of education and number of pupils failed in grade I, it would appear that this sample is representative of all teachers of grade I - VIII pupils.

2. Most teachers discuss the promotion of individual students with other school personnel, and make a joint rather than an individual decision about promotion.

3. Conditional promotions are used for many pupils, and in fact operate as promotions for all but approximately 15 per cent of the pupils so treated.

4. Most teachers claim that they notify parents early of possible failure.

5. Acceleration affects a small percentage of all students, but retardation affects many more. The ratio was one to seven.

6. The majority of elementary teachers favor promoting a child who has already repeated a grade. The majority also favor promoting a child unless there is clear evidence that non-promotion will more likely benefit him generally.

7. On the average, between five and six per cent of the students in each of the grades from I to VIII were to be failed. If no pupils were failed more than once, and all remained in school to the end of grade VIII, the cumulative effect of this practice would be that nearly half of Alberta students would fail one grade somewhere between grade I and the end of grade VIII.

8. Between grade I and grade VIII reading decreases in frequency as a reason for failure, social studies increases, while arithmetic and language remain fairly steady.

9. In general, the most frequent reasons given by teachers for failing students are associated with mastery of school subjects, and the next most frequent are associated with motivation and attitudes.

Conclusions and Implications

A finding of primary importance in this study is the emphasis which is placed by teachers on mastery of subject matter. Another very important finding is the relative absence of acceleration. Theoretically, if five per cent of the pupils in each grade are mastering school work so slowly as to warrant their repeating the grade, at the opposite extreme another 5 per cent should be mastering it so rapidly as to warrant taking two grades in one year or three grades in two years. Do administrative arrangements (i.e., grades) make this difficult if not impossible?

The net effect of the practices shown by this study is to produce over-ageness or retardation, with over-age and retarded pupils dropping out as soon as the law permits. The Annual Report of the Department of Education, Province of Alberta, shows that drop-outs reach sizeable numbers in grades VI to VIII[5], and the actual numbers are probably larger than those reported. Is retardation helping to cause drop-outs?

Teachers show a commendable desire to make promotions a *joint* responsibility, as it is, in fact, by law. Do administrative arrangements facilitate this? Teachers also claim that they notify parents early of possible failure. The cooperative approach suggested by these practices would seem to be very sound.

[5]Alberta Department of Education, **Forty-ninth Annual Report.**

BIBLIOGRAPHY

Alberta Department of Education. *Forty-Eighth Annual Report, 1953.* Edmonton, Queen's Printer, 1954.

Alberta Department of Education. *Forty-Ninth Annual Report, 1954.* Edmonton, Queen's Printer, 1955.

Caswell, Hollis L. "Non-Promotion in the Elementary Schools." Field Study No. 4, Division of Surveys and Field Studies, Peabody College for Teachers. Nashville, Tennessee, 1933.

Cook, Walter W. *Grouping and Promotion in the Elementary School.* Minneapolis, University of Minnesota Press, 1941.

Elsbree, Willard S. "Pupil Progress in the Elementary School," *Practical Suggestions for Teaching.* Bureau of Publications, Teachers College, Columbia University, 1942.

Goodlad, John I. "Research and Theory regarding Promotion and Non-Promotion." *Elementary School Journal* LII: 3 (November, 1952), pp. 150-155.

McManus, Thomas M. *A Survey of Pupil Progress in Edmonton City Schools.* M.Ed. Thesis, University of Alberta, 1950.

A SURVEY OF ARITHMETICAL ACHIEVEMENT OF GRADE EIGHT PUPILS IN ALBERTA SCHOOLS

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Purpose of the Investigation

The need for a thorough investigation of the status of arithmetical achievement in Alberta has existed for some time. In April 1955 the Faculty of Education, with the assistance of the Alberta Research Committee, launched a survey to determine how well the present course of studies was meeting the needs of our youth in view of the recent emphasis in arithmetic. The influence of intelligence and sex and their corresponding relation to achievement was studied in the different types of administrative units that exist in Alberta. Comparison also was made between the Alberta children in this survey and the American pupils on whom the test norms were based to determine existing differences.

Selection of the Sample

The subsamples randomly chosen for this investigation were from four different types of Alberta schools—urban, town, graded rural, and ungraded rural. All Alberta cities were considered a part of the urban population. The town sample was chosen from the independent town school districts with a minimum enrolment of two hundred pupils as given by the Annual Report[1]. The graded rural pupils sampled were from divisions and counties which were reported as having at least three hundred conveyed pupils[2] within their jurisdiction. The ungraded rural sample was selected from one-room schools in various divisions and counties. Urban classrooms chosen had only one grade per classroom whereas the town and graded rural classrooms had not more than two. No restrictions were placed on the number of grades in the classroom in the ungraded rural schools. To insure more valid sampling all pupils in grade VIII classrooms were tested.

The Testing Instruments

The value of a test in any particular situation is determined by the purpose of the testing program, that is, by the specific facts or information desired. After careful consideration had been given the opinions of unbiased reviewers along with the purpose of the Alberta survey, it was decided to use the *Iowa Every Pupil Test of Basic Arithmetic Skills, Test D—Advanced,* to measure arithmetic

achievement and the *Beta Test: Form CM* of the *Otis Quick-Scoring Mental Ability Tests* as a measure of intelligence.

The Iowa Test, Form O, is divided into three parts: Part I—vocabulary and fundamental knowledge, Part II—computational skills in the four fundamental processes, and Part III—problem solving. In addition, the test yields a total score computed by finding the sum of the three parts. Brownell states that

> The items intended to test vocabulary and fundamental knowledge are well selected. The examples of Part II seem to agree with current school practices for the grades V to IX. And the verbal problem Part III relate to common social applications.[3]

The Otis test was constructed to measure "the probable rate of progress the pupils will make in school."[4] Kuhlmann suggests that "the choices of the different test items is ingenious and exceptionally well done."[5] In addition, the Otis tests have proven themselves among the best mental ability tests for the prediction of achievement in school subjects.

The time factor, cost, ease of administration, and machine scoring answer sheets were additional reasons for choosing both the tests used in this survey.

Treatment of the Findings

After the tests had been administered they were returned to the Faculty of Education, University of Alberta. Since machine-scored answer sheets were used the tests were quickly and accurately scored. The data were compiled on specially prepared assembly sheets, which facilitated the construction of frequency distributions. From these distributions the means, medians, standard deviations, standard errors, skewness and kurtosis were calculated.

Significant difference between the means, the medians, or the standard deviations was found by finding the standard error of the difference and then the resulting critical ratio. In the few cases where the homogeneity of the group appeared non-existent the application of the Cochran and Cox[6] approximation method was used to find significant differences.

To determine the degree of relationship between intelligence and achievement in arithmetic, product-moment coefficients of cor-

[1]Department of Education, **Forty-Eighth Annual Report**, p. 112.

[2]**Ibid.**, p. 151

[3]William A. Brownell, "Review of the Iowa Every Pupil Test of Basic Skills in Arithmetic," **The Third Mental Measurement Yearbook**, p. 421.

[4]Arthur S. Otis, **Manual of Directions for Beta Test (Otis Quick-Scoring Mental Ability Tests)**, p. 8.

[5]F. Kuhlmann, "Review of the Otis Quick-Scoring Test of Mental Ability," **The Nineteen Forty Mental Measurements Yearbook**, p. 235.

[6]Geeorge W. Snedecor, **Statistical Methods Applied to Experiments in Agriculture and Biology**, pp. 83-84.

relation were found. A test of the reliability of the correlation coefficients was made against the null hypothesis at the .01 level of significance.

Throughout the study statistical comparisons were made on the basis of obtained raw scores. Transmuted scores were used only to determine the equivalent raw score that pupils in grade VIII could be expected to attain as supplied by the Examiner's Manual.[7] Therefore, conclusions were based on the differences and the significant differences that were obtained between uncorrelated data.

Relation of Intelligence to Arithmetical Achievement

It is widely accepted that a definite positive relationship exists between intelligence and arithmetical achievement. "Intelligence, as measured by intelligence tests is closely associated with scholastic success."[8] This seems to agree with the definition of intelligence as given by the manual of the Otis Test.[9] If this is right, we would expect the differences found in mental abilities of the four types of schools tested would rank in the same order as the results obtained from the Iowa Every Pupil Test of Basic Arithmetic Skills. Furthermore, correlations made between the mental ability scores and arithmetic scores should show a reasonable consistency.

A comparison of the mean scores of the four samples randomly selected is given in Table I.

TABLE I

COMPARISON OF MEAN INTELLIGENCE SCORES AS MEASURED BY THE OTIS QUICK-SCORING MENTAL ABILITY TEST

Sample	Number	Mean	Standard Deviation
Urban	380	104.90	12.17
Town	222	101.30	11.90
Graded Rural	213	102.35	11.60
Ungraded Rural	201	97.50	12.33

Probably the most noticeable findings is the wide variation in the means scores of the urban and ungraded rural children. Another interesting although somewhat unexpected result is the comparatively good showing of the graded rural children. The mean of the

[7]H. F. Spitzer and others, **Examiner's Manual for Test D—Advanced Basic Arithmetic Skills**, p. 10.

[8]Arthur I. Gates and others, **Educational Psychology**, p. 281.

[9]Arthur S. Otis, **op. cit.**, p. 8.

graded rural exceeds the mean of the town. This finding reverses the order of these two groups as reported by Reid.[10] Differences of intelligence in the four types of Alberta schools were statistically significant except for that between the graded rural and town samples. Probably the environmental influence and the nature of the test were the two most important factors. The number of bilingual students may have had some influence on the mean scores, as approximately twice as many bilingual students were part of the town sample as were in each of the other three groups.

Many studies have reported correlation coefficients between mental ability and achievement in arithmetic. The results of the coefficients of correlations found in this survey are recorded in Table II.

TABLE II

COEFFICIENTS OF CORRELATION BETWEEN MENTAL ABILITY AND ARITHMETICAL ACHIEVEMENT

Sample	N	Part I	Part II	Part III	Total
Urban	380	.61	.54	.52	.69
Town	222	.60	.47	.55	.64
Graded Rural	213	.61	.38	.55	.64
Ungraded Rural	201	.62	.46	.54	.62

NOTE: Part I —Vocabulary and Fundamental Knowledge.
Part II —Computational Skills.
Part III—Problem Solving.

It is interesting to note that higher correlation coefficients were found for total arithmetic than for the three subtests. This suggests that a child's total achievement in arithmetic is more closely related to intelligence than any one phase of arithmetic. Of the three subtests, mental ability was found to correlate highest with vocabulary and fundamental knowledge. The low correlations between the computational skills and mental ability were partly affected by the number of perfect scores received by many of the grade VIII students on this part of the test. When tested against the null hypothesis all the coefficients of correlation were highly significant. This indicates a marked relationship between intelligence and arithmetical achievement.

[10]T. J. Reid and George R. Conquest, "A Survey of the Language Achievement of Alberta School Children," **The Alberta Journal of Educational Research** (June, 1955), p. 45.

Relation of Sex to Arithmetical Achievement

Differences that exist between the sexes in relation to intelligence and achievement in arithmetic are usually small and generally insignificant. Both heredity and environment are factors which many psychologists believe affect intelligence and achievement. The results of the present study add support to this belief.

Sex difference in intelligence

Before comparisons of sex differences in arithmetic were made, possible differences in intelligence between the sexes were studied. Table III gives the significance of difference of mean scores for the boys and girls on the Otis test. The negative sign indicates the superiority of the girls.

TABLE III

SIGNIFICANCE OF DIFFERENCE OF MEAN SCORES FOR BOYS AND GIRLS ON THE OTIS TEST

Sample	M_D	SE_D	CR	Significance
Urban	—1.17	1.24	.94	nil
Town	—1.39	1.59	.87	nil
Graded Rural	—4.82	1.56	3.09	.01
Ungraded Rural	—2.39	1.75	1.37	nil
Total Group	—2.11	.84	2.50	.05

NOTE: M_D—Mean difference; SE_D—Standard error of the difference of means; CR—Critical radio.

The superiority of the girls in the four areas tested would suggest that they do better than the boys on verbal tests of mental ability. This agrees with the general finding of other surveys. Of the four types of schools tested only the ungraded rural showed a statistically significant difference.

Sex difference in arithmetic

The various studies that have been made with respect to differences in arithmetical achievement between boys and girls suggest that differences that do exist are often statistically insignificant. However, such differences usually favor the boys. Table IV gives the differences as measured by the Iowa Every Pupil Test of Basic Arithmetic Skills. The negative sign indicates the superiority of the girls.

TABLE IV

SIGNIFICANCE OF DIFFERENCE OF MEAN SCORES FOR BOYS AND GIRLS IN ARITHMETICAL ACHIEVEMENT

VOCABULARY AND FUNDAMENTAL KNOWLEDGE					COMPUTATIONAL SKILLS				
Sample	M_D	SE_D	CR	Sig.	Sample	M_D	SE_D	CR	Sig.
Urban	2.93	.70	4.19	.01	Urban	.37	.49	.75	nil
Town	.13	.89	.15	nil	Town	—1.34	.65	2.06	.05
G.R.	1.14	.90	1.14	nil	G.R.	—2.63	.73	3.60	.01
U.R.	1.57	.92	1.71	nil	U.R.	—1.62	.81	2.00	.05
T.G.	1.29	.43	3.01	.01	T.G.	—1.01	.33	3.06	.01

PROBLEM SOLVING					TOTAL ARITHMETIC				
Sample	M_D	SE_D	CR	Sig.	Sample	M_D	SE_D	CR	Sig.
Urban	1.81	.41	4.40	.01	Urban	4.87	1.35	3.60	.01
Town	1.37	.55	2.49	.05	Town	— .09	1.78	.05	nil
G.R.	.14	.59	.24	nil	G.R.	1.59	1.96	.86	nil
U.R.	.55	.59	.93	nil	U.R.	.95	1.98	.48	nil
T.G.	1.14	.26	4.35	.01	T.G.	1.75	.88	1.99	.05

NOTE: M_D—Mean Difference; SE_D—Standard Error of the Difference; CR—Critical Ratio; Sig.—Significance; G.R.—Graded Rural; U.R.—Ungraded Rural; T.G.—Total Group.

Probably the most significant finding of Table IV is that the boys were superior to the girls in vocabulary and fundamental knowledge, problem solving, and total arithmetic, whereas in the computational skills the girls were superior. However, in none of the areas were there significant differences recorded throughout. The two most noticeable exceptions were found in computational skills (where the mean of the urban boys exceeded that of the urban girls) and in total arithmetic (where the mean of the town girls exceeded that of the town boys). It should also be noted that the significant superiority of the graded rural girls over boys in intelligence, as measured by the Otis test, was not repeated in arithmetic achievement as measured by the Iowa test.

Comparison of Arithmetical Achievement in the Four Alberta Samples

Previous studies comparing urban and rural children all suggest the superiority of the urban pupils in arithmetical achievement. The environmental influence has always been considered a strong factor in the development of the child. Blair states that "many investigations have clearly shown the remarkable way that mental growth may be facilitated or retarded by factors present in the environment."[11] In this study it was impossible to determine the degree to which mental ability and environment predicted achievement in arithmetic as achievement quotients tables were not provided. Sex differences had little influence in determining differences in arithmetical achievement in the four types of Alberta schools, since the proportion of each sex was approximately the same in each area. Table V gives a comparison of mean scores of the four Alberta samples on the Iowa test.

TABLE V

COMPARISON OF MEAN SCORES OF FOUR ALBERTA SAMPLES ON THE IOWA ARITHMETIC TEST

VOCABULARY AND FUNDAMENTAL KNOWLEDGE

Sample	N	M	SD
Urban	380	25.04	6.96
Town	222	25.31	6.60
Graded Rural	213	25.00	6.54
Ungraded Rural	201	22.30	6.48

COMPUTATIONAL SKILLS

Sample	N	M	SD
Urban	380	27.85	4.80
Town	222	27.29	4.84
Graded Rural	213	26.33	5.54
Ungraded Rural	201	24.98	5.78

PROBLEM SOLVING

Sample	N	M	SD
Urban	380	17.71	4.10
Town	222	17.61	4.02
Graded Rural	213	17.68	4.24
Ungraded Rural	201	16.07	4.26

TOTAL ARITHMETIC

Sample	N	M	SD
Urban	380	70.66	13.68
Town	222	70.18	13.20
Graded Rural	213	68.99	14.32
Ungraded Rural	201	63.50	13.92

In total arithmetic the four schools ranked as follows: urban, town, graded rural, and ungraded rural. The same general ranking

[11] Glenn Myers Blair and others, **Educational Psychology**, p. 32.

existed in each of the subtests. Achievement in reading as studied by Carmichael [12] produced similar results. A test of the significant differences between these means is found in Table VI. The negative sign in each section of the table indicates the superiority of the last group named.

TABLE VI

SIGNIFICANCE OF DIFFERENCE BETWEEN THE MEAN SCORES IN ARITHMETIC OF THE FOUR ALBERTA SAMPLES

URBAN AND TOWN

	M_D	SE_D	CR	Sig.
Part I	—.27	.57	.47	nil
Part II	.56	.41	1.37	nil
Part III	.10	.34	.29	nil
Total	.48	1.13	.43	nil

TOWN AND GRADED RURAL

	M_D	SE_D	CR	Sig.
Part I	.31	.63	.49	nil
Part II	.96	.50	1.92	nil
Part III	—.07	.40	.18	nil
Total	1.19	1.32	.90	nil

URBAN AND GRADED RURAL

	M_D	SE_D	CR	Sig.
Part I	.04	.57	.07	nil
Part II	1.52	.45	3.37	.01
Part III	.03	.36	.08	nil
Total	1.67	1.21	1.38	nil

TOWN AND UNGRADED RURAL

	M_D	SE_D	CR	Sig.
Part I	3.01	.64	4.73	.01
Part II	2.31	.52	4.44	.01
Part III	1.54	.40	3.82	.01
Total	6.68	1.32	5.07	.01

URBAN AND UNGRADED RURAL

	M_D	SE_D	CR	Sig.
Part I	2.74	.58	4.72	.01
Part II	2.87	.48	6.02	.01
Part III	1.64	.37	4.48	.01
Total	7.16	1.21	5.92	.01

GRADED RURAL AND UNGRADED RURAL

	M_D	SE_D	CR	Sig.
Part I	2.70	.64	4.22	.01
Part II	1.35	.56	2.42	.05
Part III	1.61	.41	3.97	.01
Total	5.49	1.39	3.95	.01

NOTE: M_D—Mean Difference; SE_D—Standard Error of the Difference; CR—Critical Ratio; Sig.—Level of Significance.

[12] Anne Carmichael, **A Survey of the Achievement of Alberta School Children in Reading**, pp. 18, 27.

From Table VI it is apparent that the town and graded rural schools are obtaining standards in arithmetical achievement which are favorable in view of the urban standards. Their only lack appears to be in computational skills. The ungraded rurad children, however, are considerably lower in attainment in arithmetic as found by this survey.

Comparison of Alberta Arithmetical Achievement With the Iowa Test Norms

Few comparative studies have been reported in which the arithmetic achievement of Alberta children, as groups, was compared with standardized test norms. The writer's understanding is that Alberta children have always achieved favorable results. This finding is not substantiated by the present survey. However, it should be noted that the majority of the pupils tested, when the norms were established, were from communities with populations ranging from 1,000 to 50,000. All were graded schools; no one-room schools were included.

As the test norms do not provide mean scores, comparisons were made between the median scores or 50th percentile scores. Table VII presents these comparisons.

TABLE VII

COMPARISON OF MEDIAN SCORES OF THE FOUR ALBERTA SAMPLES WITH THE TEST NORMS OF THE IOWA EVERY PUPIL TEST OF BASIC ARITHMETIC SKILLS

	Urban	Town	Graded Rural	Ungraded Rural	Iowa Test
Vocabulary and Fundamental Knowledge	25.33	26.34	24.91	22.38	26.50
Computational Skills	29.25	28.58	27.26	25.40	29.25
Problem Solving	17.66	17.78	17.55	16.16	17.67
Total Arithmetic	72.20	72.23	69.94	64.88	72.50

In all cases except two the medians of the Alberta sample were lower than the medians of the test norms. The best results of the Alberta pupils were found in problem solving; the poorest results appeared to be in vocabulary and fundamental knowledge. To assist further in analyzing these results the significant departures of the Alberta sample medians from the test medians are presented in Table VIII. The negative sign indicates the superiority of the Alberta group.

TABLE VIII

SIGNIFICANCE OF DIFFERENCE BETWEEN THE MEDIAN SCORES OF THE FOUR SAMPLES OF ALBERTA CHILDREN AND THE TEST NORMS

Sample	Mdn_D	SE_D	CR	Significance
Urban				
Part I	1.17	.45	2.60	.01
Part II	.00	.31	.00	nil
Part III	.01	.27	.04	nil
Total	.30	.88	.34	nil
Town				
Part I	.16	.56	.29	nil
Part II	.67	.41	1.63	nil
Part III	— .11	.34	.32	nil
Total	.27	1.11	.24	nil
Graded Rural				
Part I	1.59	.56	2.84	.01
Part II	1.99	.48	4.15	.01
Part III	.12	.37	.32	nil
Total	2.56	1.23	2.08	.05
Ungraded Rural				
Part I	4.12	.67	6.15	.01
Part II	3.85	.51	7.55	.01
Part III	1.51	.38	3.97	.01
Total	7.62	1.23	6.20	.01

NOTE: Mdn_D—Median Difference; SE_D—Standard Error of the Difference; CR—Critical Ratio.

Several factors are apparent from Table VIII. The graded rural and the ungraded rural pupils were significantly below the test norms in total arithmetic and most of the subtests. The urban children were significantly below the test medians in vocabulary and fundamental knowledge. In no case was the town sample significantly below that of the test norms. In only one of the sixteen cases did the Alberta median exceed that of the test norms.

The total results of these comparisons suggest that some improvement on the part of the Alberta children in grade VIII is desirable. Alhough the town and urban children compared satisfactorily in most of the areas tested, there appears to be a definite deficiency in arithmetical achievement of the rural pupils. This is particularly true of the ungraded rural children. Since the Iowa test places considerable emphasis on meaning and understanding as suggested by Ayers,[13] there seems some reason to believe that not enough stress has been placed on this phase of teaching in Alberta schools. The environment and intellectual factors again appear to play a prominent part in the achievement of the Alberta children.

Summary of Findings

Any testing program of this kind has certain limitations: obtaining a reliable sample, acquiring an adequate testing instrument, providing for similar testing situations, and interpreting the results scientifically. Within these limitations the conclusions based on the data accumulated from four types of Alberta schools may be summarized as follows:

1. On verbal tests of mental ability pupils from graded schools demonstrate a superiority over those from ungraded schools. The relatively good attainment of the graded rural pupils suggests that the school environment was largely responsible for the differences. The familiarity of the pupils with tests of mental ability also appears to influence the results.

2. The achievement of Alberta school children compares favorably with the norms of the Otis Quick-Scoring Mental Ability Test. The results obtained by the ungraded rural children are not too alarming in view of cultural factors.

3. The average correlation coefficient of .65 between the Otis Quick-Scoring Mental Ability Test and the Iowa Every Pupil Test of Basic Arithmetic Skills suggests that there is a relationship between intelligence and arithmetical achievement.

4. On the Otis Quick-Scoring Mental Ability Test the girls demonstrate a superiority to the boys; however, this superiority is not significant in three of the four types of schools tested. The verbal nature of the test appears to be the prime factor in this consistent result.

5. The boys show a general superiority over the girls in arithmetic, although in many cases it is not significant. However, in the computational skills the girls appear more efficient in all but the urban schools.

[13]Frederick L. Ayers, "Review of the Iowa Every Pupil Test of Basic Skills," **The Third Mental Measurements Yearbook**, pp. 33-41.

6. The Iowa Every Pupil Test of Basic Arithmetic Skills does not adequately measure the superior grade VIII students in the computational skills. When used as a survey test it has some limitations; however, for normal classroom use and individual diagnosis it appears quite reliable.

7. The urban schools appear to provide the most efficient type of arithmetical instruction, but this superiority appears to be significant only when comparison is made with the ungraded rural schools. The results suggest that the ungraded rural schools are also significantly below the standards of the town and graded rural schools.

8. The standardization group of the Iowa Every Pupil Test of Basic Arithmetic Skills appears superior to the Alberta children in arithmetic. However, the town and urban pupils do not appear to achieve significantly below the test norms. The very poor attainment of the ungraded rural pupils is cause for concern.

9. On the three subtests the Alberta children appear to be most efficient in problem solving, least efficient in vocabulary and fundamental knowledge. If the Iowa test is one of meaningful arithmetic, the results suggest that more stress should be placed on meaning and understanding in arithmetic in the Alberta schools.

Recommendations

1. Every effort should be made by educational leaders and interested citizens of Alberta to encourage experienced and qualified teachers to teach in the ungraded rural schools.

2. Under favorable conditions the organization of the graded rural school should be encouraged.

3. Further testing programs should be considered to evaluate periodically Alberta standards so as to provide unbiased information concerning Alberta schools.

4. The development of a standardized arithmetic test based on the curriculum of the Alberta schools is recommended.

5. Teachers in Alberta should be encouraged to place more stress on understanding and meaning in arithmetic.

BIBLIOGRAPHY

Alberta Department of Education. *Junior High School Curriculum Guide for Mathematics.* The Department, 1952.

Ayers, Frederick I. "Review of the Iowa Every Pupil Test of Basic Skills." *The Third Mental Measurements Yearbook* (1953), pp. 33-41.

Blair, Glenn Myers and others. *Educational Psychology.* New York, The Macmillan Company, 1954.

Brownell, William A. "Review of the Iowa Every Pupil Test of Basic Skills in Arithmetic." *The Third Mental Measurements Yearbook* (1949), pp. 421-422.

Carmichael, Anne. *A Survey of the Achievement of Alberta School Children in Reading.* M.Ed. Thesis, University of Alberta, 1954.

Alberta Department of Education, 1953 files.

Alberta Department of Education, *Forty-Eighth Annual Report,* 1953.

Garrett, Henry E. *Statistics in Psychology and Education.* New York, Longmans, Green and Company, 1947.

Gates, Arthur I. and others. *Educational Psychology.* New York, The Macmillan Company, 1942.

Good, Carter V., and Scates, Douglas E. *Methods of Research.* New York, Appleton-Century-Crofts, Inc., 1954.

Hinds, James H. "A Comparison of the Brightness of Country and City High School Children." *Journal of Education Research* V (1922), pp. 120-124.

Kuhlmann, F. "Review of the Otis Quick-Scoring Tests of Mental Ability." In *The Nineteen Forty Mental Measurements Yearbook,* 1940.

Lindquist, E. F. *Statistical Analysis in Educational Research.* Boston, Houghton Mifflin Company, 1940.

Louttit, C. M. *Clinical Psychology.* New York, Harper and Brothers, 1947.

Otis, Arthur S. *Manual of Directions for Beta Test.* Otis Quick-Scoring Mental Ability Tests.

Reid, T. J. *A Survey of Language Achievement of Alberta School Children in Relation to Bilingualism, Sex, and Intelligence.* M.Ed. Thesis, University of Alberta, 1954.

Snedecor, George W. *Statistical Methods Applied to Experiments in Agriculture and Biology.* Ames, Iowa, The Collegiate Press, 1946.

Spitzer, H. F. and others. *Examiner's Manual for Test D—Advanced Basic Arithmetic Skills.* Boston, Houghton Mifflin Company, 1945.

Stroud, J. B. and Lindquist, E. F. "Sex Differences in Achievement in the Elementary and Secondary schools." *Journal of Educational Psychology* XXXIII (1942), pp. 657-666.

Wahlquist, John T. "Intelligence of Rural and Urban Children." *Elementary School Journal* XXVII (1927), pp. 682-684.

A STUDY OF SPELLING DISABILITIES IN GRADES FOUR, FIVE, AND SIX

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Two recent surveys in language[1] gave some evidence that spelling achievement in Alberta is generally good. Nevertheless, many parents, teachers, and employers would like to know (1) why some children have spelling difficulties, (2) what is the nature of these difficulties, (3) what are the best classroom methods for preventing and overcoming these difficulties. It is possible to answer these questions by studying the pattern of symptoms exhibited by both good and poor spellers, and by conducting a series of controlled experiments to find the best teaching techniques. This is a study of the major difficulties of poor spellers and, as such, is a step toward improving spelling instruction.

Procedure

In 1953, the teachers of six Edmonton Public Schools submitted a list of grade IV, V, and VI students who were (1) one or more years retarded for their grade in spelling on the September City Spelling Ability Tests, (2) average or above average intelligence, (3) not new Canadians.

110 students of the 15 per cent referred by the schools were chosen for this study. 71 per cent of the 110 were from grade VI, 40 per cent being girls. The group had an average chronological age of 11 years 17 months, a spelling grade of 4.7, and actual grade placement of 5.5 The sample included children from the labouring and professional classes.

Data about spelling disability, word recognition skills, speech, related subjects, study methods, attitudes, personality, sensory functions, intelligence, and certain aspects of school progress were collected by objective tests, individual interviews, and examination of school records. Means and ranges were computed for all data except spelling errors, study habits, and pronunciation. In addition, inter-correlations of spelling, intelligence, reading, auditory discrimination, visual perception, phonics in context, and single phonic sounds were obtained. Correlations were not calculated for hand-

[1]H. T. Coutts and H. S. Baker, "A Study of the Written Composition of a Representative Sample of Alberta Grade Four and Grade Seven Pupils," **The Alberta Journal of Educational Research** (June, 1955), pp. 5-18; and T. James Reid and George R. Conquest, "A Survey of the Language Achievement of Alberta School Children," **The Alberta Journal of Educational Research** (June, 1955), pp. 39-52.

writing and composition because the mean achievement was very low, nor were they calculated for more than one of the phonic sound tests as each was a division of the same skill.

Testing

The selection of tests was partly guided by Dr. George Spache's outline for spelling diagnosis.

Spelling errors

To estimate the group tendencies for spelling error, the Spache Spelling Test of 120 words representing 13 types of errors was dictated. The mistakes were then categorized. For example, spelling *almoce* for *almost* contains errors of types 8 and 12, and spelling *libt* for *liberty* which has more than three errors is type 13 (see Table I). The test norms indicate the range of errors of average pupils. The errors on the Written Composition were also classified according to the 13 types, thus giving a pattern of the errors made in context, as well as in column spelling.

Word recognition skills

By grade IV, a child is expected to know the alphabet, isolated phonic sounds, and to be able to relate them to written symbols. To test this knowledge, each child was required to name a list of upper and lower case letters and to sound a list of the most commonly used vowels, consonants, digraphs, dipthongs, and blends. Only instant recognition was considered. To test knowledge sounds in context, each pupil was asked to read aloud a list of simple words containing the major sound elements. Word recognition is influenced by good auditory discrimination, and visual perception. A series of digits ranging in size from one to ten was given orally, and later shown visually by means of a tachistoscope for even timing and visibility. Twenty-five words of more than one syllable such as *recognition, permanent* and *remembrance,* were read aloud and recorded for pronunciation.

Related academic subjects

The three related academic subjects considered in this study are reading, composition, and handwriting. Reading depends on the same mechanical skills as spelling. Written compostion demonstrates the effectiveness of the teaching of spelling. Poor handwriting results in many spelling errors.

A cross-section of spelling achievement and the related subjects of reading, written composition, and handwriting was obtained by the Schonell Spelling, Graded Word Recognition Reading Test, and Composition Scale. The written compositions were also evaluated by the Ayres Scale for Handwriting.

Study habits and attitude

Through personal discussion, each child was asked what method he used to study spelling, and whether he considered himself a good, average, or poor speller. The pupil's study method was evaluated by checking on his use of the five recognized steps to be taken in learning to spell a word:—look, say, spell, write, check.

Personality

The Brown Personality Inventory of Children was used. A score over 18 shows below average adjustment.

Vision and hearing

The Edmonton Society of Optometrists gave a twenty-five minute visual examination to each child—ocular history and symptoms, external and internal examination, objective and subjective refraction far and near, muscle balance and visual skills tests. Vision testing in the schools is usually done by the Snellen Chart which is subjective.

The investigator examined each child's hearing with a Maico Audiometer. The findings were evaluated with the help of an Edmonton audiologist. Test results could be queried because a sound-proof room was not used.

School records of vision and hearing were tabulated.

Intelligence

To ensure that the intelligence of this group was not influenced by a lack of verbal ability, the SRA Primary Mental Abilities Test which has a total non-reading score was administered. Attention and concentrated effort were evaluated by the Memory Span for Backwards and Forwards Digit Test from the Wechsler Intelligence Scale for Children (WISC).

School history

This was obtained from the school records.

Findings

Spelling errors

Spache has found that good spellers tend to make errors which show an awareness of sound characteristics of words and letters, greater skill in phonics and better auditory discrimination, while poor spellers make errors in types 2, 11, 12, and 13, indicating the confusion and inaccuracy regarding sounds, as well as the poor auditory discrimination so often found among those with poor word analysis. From Table I, it can be seen that the group have more errors than would normally be expected in the omission of a doubled

letter, phonetic substitution of a word, and unrecognizable or incomplete words. They show only one of the characteristics of badly retarded spellers and none of the characteristics of good spellers.

TABLE I

ANALYSIS OF SPELLING ERRORS IN PERCENTAGES (N=110)

Type of Error	Spache	Written Composition	Norm
1. Omission of a silent letter	10	9	9-17
2. Omission of a sounded letter	12	16	5-17
3. Omission of a doubled letter	11*	5	3-10
4. Addition by doubling	5	5	1- 5
5. Addition of a single letter	11	14	7-19
6. Transpositions or reversals	7	6	2- 7
7. Phonetic substitution for a vowel	11	10	11-25
8. Phonetic substitution for a consonant	8	4	5-14
9. Phonetic substitution for a syllable	3	3	2- 8
10. Phonetic substitution for a word	6*	7*	0- 5
11. Non-phonetic substitution for a vowel	3	4	1- 4
12. Non-phonetic substitution for a consonant	5	13*	2- 5
13. Unrecognizable or incomplete	14*	10*	0-13

*Excessive Errors.

In written composition, or spelling in context, they show excessive errors in types 10, 12, and 13, the latter two being characteristics of badly retarded spellers. Excessive errors in types 3 and 10 show some awareness of the sound characteristics of words and letters. There is a suggestion of poor visual imagery or lack of word meaning. Poor letter formations in handwriting were the main reasons for errors in types 12 and 13. In general, most errors fell within the normal range, but the number of non-phonetic errors was slightly more than the phonetic.

Word recognition skills

Table II indicates a good but not perfect knowledge of alphabet letter names. The greatest number of errors were made in the following order: L, l, I, X, B, J.

A knowledge of only 73 per cent of single sounds and 84 per cent of digraphs, diphthongs and blends, as found in this study, should cause difficulty in spelling. From 3 to 11 per cent of all errors were made in the following:

Vowel sounds	y, u, o, i, e, a
Consonant sounds	h, g, qu, w, c, x, z
Digraphs, dipthongs	oo, oi, oy, aw, au, wh, ay
Consonant blends	cl, gn, fl, sp, sw, sm, tr

Fewer errors were made with phonics in context. Of these errors, 41 per cent were in words using digraphs, diphthongs, and blends (example, *glue* and *market*); 35 per cent in words of more than one syllable (example, *contented* and *glittering*): 24 per cent in words with short vowel sounds (example, *mitt, van*). It was evident that the errors made in phonics in isolation and in context followed the same pattern.

Auditory discrimination and visual perception were as good as these achieved by a group of average adults in a previous study[2] reported by this investigator. These skills are factors in intelligence. Therefore this group, being of average intelligence, would be expected to have these abilities.

Although there were no noticeable speech defects, the group made many mispronunciations. Of the 88 per cent who could read the list of 25 words, 35 per cent omitted or inserted syllables, 27 per cent missed digraphs and diphthongs, while 11 per cent misplaced the accent. Again, this followed the same pattern as that on the phonic tests.

Related academic subjects

From Table II, it can be seen that spelling and reading have the same mean achievement, that is, well below actual grade placement. The written compositions were at a grade II level—short, unimaginative, and simple in vocabulary. This gave little opportunity for spelling errors. The handwriting was of grade II quality. Letter formation was poor (example, *m* and *t* became *n* and *f*); wrong letters were substituted; letters were connected by overwriting (example, *affended* became *attended*). As spelling and handwriting are tools for getting ideas on paper, a low composition score for this group is understandable.

Study habits and attitude

An effective study method was used by 2 per cent of the group, 27 per cent gave some evidence of knowing a method, 28 per cent wrote out the words, while others depended on home help, the

[2]D. Lampard, **Alberta Journal of Educational Research**, Vol. I. No. 1. p. 55 ff.

dictionary, and sounding. In estimating their own spelling achievement, 13 per cent thought they were good, 56 per cent average, 19 per cent poor, and 11 per cent did not know.

TABLE II
SUMMARY OF SPELLING TESTS DATA IN MEANS AND RANGES
(N=110)

	Mean	Range	Implication
Chronological Age	11-7	9.0-13 $11/12$	Over age for grade
Actual Grade Placement	5.5	4-6	
Alphabet (per cent)	98	88-100	
Single Sounds (per cent)	73	0-100	
Digraphs, diphthongs, blends (per cent)	84	25-100	
Sounds in Context (per cent)	97	76-100	
Auditory Discrimination for Digits	6	2-9	Good
Visual Perception for Digits	4	0-6	Good
Spelling Grade	4.7	2.4-5.0	Retarded
Reading Grade	4.9	2.4-8.0	Retarded
Written Composition Grade	3.02	2.6-5.6	Retarded
Handwriting Grade	2.0	1.0-6.0	Retarded
Personality Inventory	23	3-46	Below average adjustment
PMA Non Reading I.Q.	98	75-140	Average
PMA Total I.Q.	97	78-129	Average
WISC Digits	11	6-13	Grade VI level

Personality

The Personality Rating of 23 indicated below-average to poor adjustment. The school records showed that 25 per cent had some behaviour deviation—usually anti-social aggression.

Vision and hearing

The optometrists' findings, as listed in Table III, indicated that 22 per cent of the children required a complete visual examination,

while a further 21 per cent were considered borderline cases. The school records showed that 7 per cent failed and 10 per cent were borderline. These findings are not out of line with similar school visual surveys conducted in Canada and the United States, in which it has been found that the Snellon Chart usually detects only half of those who need visual attention.

Hearing did not appear to be a problem with this group, as only 10 per cent were considered borderline cases. Unless the defects were gross, few notations appeared on the school records.

TABLE III

VISION AND AUDITORY TEST RESULTS IN PERCENTAGES

	Vision		Hearing	
	Optometrists	Schools	Audiometer	Schools
Per cent passed	57	83	90	100
Per cent failed	22	7	0	1
Per cent borderline	21	10	10	0
Per cent wearing glasses or hearing aid	15	5	0	0

Intelligence

The Primary Mental Ability Test and the school test results placed the group in the normal range of intelligence. The total non-reading and the total score for the PMA showed little difference on the average, but the range was greater on the total non-reading score. This may indicate that there is more opportunity for students to show intellectual ability when reading is not involved.

The WISC Digits, although considered the least valid of that battery of tests, was high enough on the average to show a capacity for concentration and attention—a raw score of 11 gives a mental age of about 12 years, which is average for this group.

School history

In Table II, the wide range in chronological age (from 9 to 13 years 11 months, with the average age of 11 years 7 months) revealed a number of over-age children. This can be accounted for by the fact that 27 per cent were repeaters—70 per cent of these failed in the primary grades. Over the school years, 35 per cent had attended two schools, 28 per cent three schools, 11 per cent four schools, 3 per cent five schools, and 3 per cent six or more schools. There can

be no doubt that many of these children had difficulty in beginning to learn. Minor physical defects were found in 12 per cent of the cases.

Intercorrelations

In Table IV, the correlations of spelling with reading, auditory discrimination, and phonics in context, which were significant at the .05 and .01 levels, suggested that the same skills were being measured. These findings, together with those of visual perception and intelligence, compared favourably with other studies in the field. The correlation of .02 for single phonic sounds does not compare with those other studies. Does this mean that there is no relationship betwen single phonic sounds and spelling, or does it mean that single phonic sounds have not been emphasized in the school?

TABLE IV
CORRELATIONS OF SPELLING WITH OTHER TESTS

	Spelling
Reading	.66
Auditory Discrimination	.36
Visual Perception	.02
PMA Total Score	.02
Phonics in Context	.33
Single Phonic Sounds	.02

Summary and Conclusions

A study of 110 students in grades IV, V, and VI, who had average ability and were a year or more retared in spelling, revealed the following:

1. Confusions and inaccuracies caused by ineffective word recognition skills or poor handwriting.
2. Knowledge of sounds in isolation inferior to knowledge of sounds in context.
3. Little knowledge of syllabication as indicated in pronunciation.
4. Undeveloped language skills, revealed by retardation in the related subjects of reading, written composition and handwriting.
5. Little evidence of systematic study methods.
6. Inability to evaluate individual spelling achievement.
7. Low personality rating.

8. Twenty-seven per cent of sample were repeaters and many had changed schools.
9. Twenty-two per cent of sample had defective vision and many were borderline.
10. Few physical, hearing or speech defects.
11. Apparently normal ability in auditory discrimination, visual perception, and ability to concentrate.

No final conclusions may be drawn from these findings until a similar study of good spellers has been made.

Recommendations

In any further research in this field, the following recommendations are proposed:

1. A soundproof room should be used when testing hearing.
2. A vocabularly test should be given because meaning is an integral part of learning to spell.
3. Auditory discrimination and visual perception of words and phrases, as well as digits, should be tested.
4. For better understanding, interpretation of the project to parents and pupils should be uniform.

Educational Implications

In planning a spelling improvement program, it is necessary to evaluate every source of difficulty—spelling errors, word recognition skills, speech, related subjects, study methods, attitudes, personality, sensory functions, intelligence, and school history.

Any teacher wishing to show leadership in curriculum development can find the spelling disabilities of a class and experiment with different teaching techniques by using the following outline, which developed as a result of this and other studies:

1. Study school records.
2. Analyze spelling errors by collecting a minimum of 100 misspelled words for each child, and classify them according to the thirteen categories in Table I.
3. Evaluate word recognition skills, pronunciation, and study habits, by giving informal tests.
4. Summarize the major characteristics.
5. Select two or three of these major characteristics for improvement.
6. Plan a six to eight-week programme, using one teaching technique.
7. Evaluate the programme.
8. Use the findings of in-service training discussions.

EXTENSION OF THE STUDY

After completion of the foregoing study, the 110 students were divided into a control and experimental group, matched as to intelligence and spelling ability. The experimental group was subdivided into four smaller groups and tutored for nine one-hour sessions, over a period of three weeks. The programme was concerned with improving motivation, study habits, and word recognition skills, factors which had been found in the analysis to need immediate attention. A detailed reporting of the data is not made here because there was not sufficient time to do more than break down some of the old habits. However, a description of the teaching method is given, since it did promise something of value for further research.

During the first tutoring session, the students were informed of their spelling difficulties. After a discussion, they decided to concentrate as much as possible on spelling to see what improvement could be made at the end of three weeks. The students went so far as to relate sounds to the letter symbols on the license plates of passing cars.

The parents were invited to an evening meeting. The purpose of the project was explained, and they were asked to show a special interest. Those who wished to assist more specifically were given directions and materials for improving auditory discrimination and visual perception. It was stressed that training periods of about 15 minutes are the most effective.

At the beginning of each session, the tachistoscope was used for ten minutes. Noting what each child missed in forms and digits gave some understanding of how words are misspelled. For instance, some might see only the first part of the word, some the middle letters, while others might use the wrong sequence or reverse positions. This illustrated the necessity for greater concentration on word detail, and the advantages of being able to mentally photograph the word.

Next came more training in visual perception, with the addition of practice in auditory discrimination. Mimeographed lists of words containing the different phonemes were given to the pupils. The first day, the list contained words with the short "a". The children worked in pairs and helped each other to become familiar with these words. Each child was then asked to read them orally and as quickly as possible. While this was being done, the others watched for errors. Mistakes in pronunciation, omission or substitution were discussed by the whole group after the individual who performed had given his own analysis. After ten minutes of this, the lists were collected and preparations made for writing. The in-

structor read a series of these words quietly and quickly. Directions were given to watch the instructor's lip movement, to listen, to say the word to themselves, and then to write it down. Poor letter formation of any kind was counted as an error. The words were checked immediately and pupils explained the reasons for their errors. Each child kept a record of progress.

At this stage, there was a brief discussion on study habits or some point of interest about word meanings, etc. This was followed by Film Strips on Spelling.

The steps in learning how to spell were practiced by using five spelling demons a day, as follows: (1) Looking at the word in a dictionary (2) Finding the meaning, pronunciation and syllabication (3) Pronouncing the word as directed by the dictionary (4) Spelling the word orally, in syllables, and without looking (5) Checking oral spelling (6) Writing the word without looking, while saying it in syllables (7) Checking with the written word. At every other session, these demons were tested. Demons were used because they presented a challenge. Although the children were not acquainted with the other groups being taught, they were most interested in comparing the group results.

In this method, emphasis was placed on relating sounds and symbols by means of auditory discrimination and visual perception. In addition, stress was laid on the importance of having the child fully understand his own errors. By following the same routine, confidence is established. A short period of intensive treatment on a few difficulties forms new habits, which can then be practiced in the regular school programme.

BIBLIOGRAPHY

Betts, Emmett, A. "Inter-relationship of Reading and Spelling." *Elementary English Review* XXII (January, 1945), pp. 13-23.

Coutts, Herbert T. and Baker, Harold S. "A Study of the Written Composition of a Representative Sample of Alberta Grade Four and Grade Seven Pupils." *The Alberta Journal of Educational Research* I:2 (June, 1955), pp. 5-18.

Durrell, Donald D. "Learning Difficulties Among Children of Normal Intelligence." *The Elementary School Journal* LV (December, 1954).

Lampard, Dorothy. "The Reading Abilities of Adults." *The Alberta Journal of Educational Research* I:1 (March, 1955), pp. 53-60.

Fitzgerald, James A. *The Teaching of Spelling.* Milwaukee, The Bruce Publishing Company, 1951.

Reid, Thomas J. and Conquest, George. "A Survey of the Language Achievement of Alberta School Children." *The Alberta Journal of Educational Research* I:2 (June, 1955), pp. 39-52.

Rizzo, N. D. "Studies in Visual and Auditory Memory Spans with Special Reference to Reading Disabilities." *Journal of Experimental Education* VIII (December, 1939), pp. 208-244.

Russell, David H. "A Diagnostic Study of Spelling Readiness." *Journal of Educational Research* XXXVII (December, 1942), pp. 276-283.

Russell, David H. "Spelling Ability in Relation to Reading and Vocabulary Achievements." *Elementary English Review* XXIII (January, 1946), pp. 32-37.

Schonell, F. J. "Diagnostic and Attainment Testing." Toronto, Clarke-Irwin Company, 1950.

Schonell, F. J. "Backwardness in the Basic Subjects." Toronto, Clarke-Irwin Company, 1946.

Spache, George. "A Critical Analysis of Various Methods of Classifying Spelling Errors, I." *Journal of Educational Psychology* 31 (February, 1940), pp. 111-134.

Spache, George. "Validity and Reliability of the Proposed Classification of Spelling Errors, II." *Journal of Educational Psychology* 31, (March, 1940), pp. 204-214.

Spache, George. "Characteristic Errors of Good and Poor Spellers." *Journal of Educational Research* 34 (November, 1940), pp. 182-189.

Spache, George. "Spelling Disability Correlates II—Factors That May Be Related to Spelling Disability." *Journal of Educational Research* 35 (October, 1941), pp. 119-137.

Spache, George. "Manual for the Spelling Errors Tests." Reading Laboratory and Clinic, Anderson Hall, University of Florida, Gainesville, Florida.

Townsend, Agatha. "An Investigation of Certain Relationships of Spelling with Reading and Academic Aptitude." *Journal of Educational Research* XL (February, 1947), pp. 465-471.

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CONTENTS

VOLUME 1, 1955

No. 1, March

PAGE

Factors Associated with School Drop-Outs 7
Albert E. Hohol

A Survey of Reading Achievement in Alberta Schools 18
Anne Carmichael and Robert E. Rees

A Comparative Study of Public and Private Ownership of School Buses in Alberta 34
Robert A. Kimmitt

Why Teaching is Chosen as a Career 44
S. C. T. Clarke and W. Pilkington

The Reading Abilities of Adults 53
Dorothy M. Lampard

No. 2, June

A Study of the Written Composition of a Representative Sample of Alberta Grade Four and Grade Seven Pupils 5
H. T. Coutts and H. S. Baker

Roman Catholic Separate and Public Schools in Alberta 19
Sister L. A. Hochstein, F.C.J.

A Cooperative Staff Project to Improve Reading 30
Everett B. Ooley

A Survey of the Language Achievement of Alberta School Children 39
T. James Reid and George R. Conquest

APPENDIX: A Composition Scale for Alberta Grade Four and Grade Seven Students 53

No. 3, September

A Study of the Self-Concept and Ideal-Concept in Adolescence 5
J. R. McGregor

An Investigation into the Annoyances and Frustrations which Cause Alberta Teachers to Quit Teaching 17
Thomas H. Murray

Physical Education in Alberta High Schools 34
Kenneth Grierson

Post-School Occupations of Alberta 1949 High School Graduates with University Entrance Standards 43
W. Glyn Roberts and A. O. Ackroyd

An Analysis of the Editorial Treatment of Education in the Alberta Press 54
Walter H. Worth

No. 4, December

Individual Differences in Alberta Schools 5
G. M. Dunlop, S. Hunka, H. Zingle

An Analysis of English Errors and Difficulties among Grade Ten Students in the Smoky Lake School Division 15
Michael Skuba

Promotion Practices and Policies in Alberta Schools 24
S. C. T. Clarke

A Survey of Arithmetical Achievement of Grade Eight Pupils in Alberta Schools 35
Clarence E. Climenhaga

A Study of Spelling Disabilities in Grades Four, Five, and Six 48
Dorothy M. Lampard